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ABSTRACT

In 2001, the National Assessment of Educational Progress (NAEP) conducted a geography assessment of the nation's fourth-, eighth-, and twelfth-grade students. This report presents the results of that assessment. Results in 2001 are compared to results of 1994's NAEP geography assessment, which was the preceding NAEP geography assessment and the only other geography assessment conducted under the current framework. Students' performance on the assessment is described in terms of average scores on a 0-500 scale and of percentage of students attaining three achievement levels: (1) basic; (2) proficient; and (3) advanced. Average geography scores for fourth and eighth graders were higher in 2001 than in 1994, while the performance of twelfth graders was not significantly different. At both grades 4 and 8, score increases occurred among the lower-performing students. The 2001 assessment showed that 21% of fourth graders, 30% of eighth graders, and 25% of twelfth graders performed at or above the proficient level for their respective grades. These levels are identified as those at which all students should perform. Both grades 4 and 8 showed an increase from 1994 to 2001 in the percentage of students at or above basic. No significant changes occurred in the percentage at or above "Proficient" at any grade. In addition to overall results, the report provides data on the performance of various subgroups of students and information about the contexts for learning by administering questionnaires to assessed students, their teachers, and their school administrators. The report contains six chapters, each of which

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includes extensive figures and tables. Appended are additional data and an overview of procedures used for the assessment. (BT)

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The Nation's Report Card: Geography, 2001

Andrew R. Weiss
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Barbara S. Hildebrant
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Scott Davis
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National Center for Education Statistics

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The Nation's Report Card

Geography 2001

The Nation's Report Card NAEP

U.S. Department of Education
Office of Educational Research and Improvement

NCES 2002-484

What is The Nation's Report Card?

THE NATION'S REPORT CARD, the National Assessment of Educational Progress (NAEP), is the only nationally representative and continuing assessment of what America's students know and can do in various subject areas. Since 1969, assessments have been conducted periodically in reading, mathematics, science, writing, history, geography, and other fields. By making objective information on student performance available to policymakers at the national, state, and local levels, NAEP is an integral part of our nation's evaluation of the condition and progress of education. Only information related to academic achievement is collected under this program. NAEP guarantees the privacy of individual students and their families.

NAEP is a congressionally mandated project of the National Center for Education Statistics, the U.S. Department of Education. The Commissioner of Education Statistics is responsible, by law, for carrying out the NAEP project through competitive awards to qualified organizations. NAEP reports directly to the Commissioner, who is also responsible for providing continuing reviews, including validation studies and solicitation of public comment, on NAEP's conduct and usefulness.

In 1988, Congress established the National Assessment Governing Board (NAGB) to formulate policy guidelines for NAEP. The Board is responsible for selecting the subject areas to be assessed from among those included in the National Education Goals; for setting appropriate student performance levels; for developing assessment objectives and test specifications through a national consensus approach; for designing the assessment methodology; for developing guidelines for reporting and disseminating NAEP results; for developing standards and procedures for interstate, regional, and national comparisons; for determining the appropriateness of test items and ensuring they are free from bias; and for taking actions to improve the form and use of the National Assessment.

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The Nation's Report Card

Geography 2001

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June 2002

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Office of Educational Research and Improvement

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Executive Summary

The National Assessment of Educational Progress (NAEP) is the nation's only ongoing representative sample survey of student achievement in core subject areas. In 2001, NAEP conducted a geography assessment of the nation's fourth-, eighth-, and twelfth-grade students.

Authorized by Congress and administered by the National Center for Education Statistics (NCES) in the U.S. Department of Education, NAEP regularly reports to the public on the educational progress of students in grades 4, 8, and 12. This report presents the results of the NAEP 2001 geography assessment for the nation. Results in 2001 are compared to results of the 1994 NAEP geography assessment, which was the preceding NAEP geography assessment and the only other geography assessment conducted under the current framework. Students' performance on the assessment is described in terms of average scores on a 0–500 scale and in terms of the percentage of students attaining three achievement levels: *Basic*, *Proficient*, and *Advanced*. The achievement levels are performance standards adopted by the National Assessment Governing Board (NAGB) as part of its statutory responsibilities. They represent collective judgments of what students should know and be able to do.

The Nation's Report Card

Major Findings at Grades 4, 8, and 12

Results for Student Subgroups

Classroom Contexts for Learning

Becoming a More Inclusive NAEP

As provided by law, the Deputy Commissioner of Education Statistics, upon review of a congressionally mandated evaluation of NAEP, determined that the achievement levels are to be used on a trial basis and should be interpreted with caution. However, both the Deputy Commissioner and the NAGB believe these performance standards are useful for understanding trends in student achievement. They have been widely used by national and state officials as a common yardstick of academic performance.

In addition to providing average scores and achievement-level performance in geography for the nation's fourth-, eighth-, and twelfth-graders, this report provides results for subgroups of students at those grade levels defined by various background characteristics (such as gender, race/ethnicity, region, parents' education, etc.) and classroom contexts for learning. A summary of major findings from the 2001 NAEP geography assessment is presented on the following pages. Differences between results across years or between groups of students are discussed only if they have been determined to be statistically significant. Readers are cautioned that the relationship between a contextual variable and student performance is not necessarily causal.

Major Findings at Grades 4, 8, and 12

- Average geography scores for fourth- and eighth-graders were higher in 2001 than in 1994, while the performance of twelfth-graders was not significantly different.
- At both grades 4 and 8, score increases occurred among the lower-performing students (at the 10th and 25th percentiles).
- The 2001 geography assessment showed that 21 percent of fourth-graders, 30 percent of eighth-graders, and 25 percent of twelfth-graders performed at or above the *Proficient* level for their respective grades. These levels are identified by NAGB as those at which all students should perform.
- Both grades 4 and 8 showed an increase from 1994 to 2001 in the percentage of students at or above *Basic*. There were no significant changes in the percentage at or above *Proficient* at any grade.

Results for Student Subgroups

In addition to overall results, NAEP reports on the performance of various subgroups of students. Observed differences between student subgroups in NAEP geography performance may reflect a range of socioeconomic and educational factors not addressed in this report or by NAEP.

Gender

- There was no statistically significant change at any grade in the average scores of either male or female students between 1994 and 2001.
- In 2001 as in 1994, male students at grades 4, 8, and 12 had higher average scores than female students.

Race/Ethnicity

- At grade 4, Black students had higher average scores in 2001 than in 1994.
- In 2001, White, Asian/Pacific Islander, and American Indian students had higher average scores than Black and Hispanic students at all three grades.
- The 2001 results show a narrowing of the average score point difference between White students and Black students at grade 4.

Region of the Country

- ☐ Between 1994 and 2001, the average scores of fourth-graders increased in the Northeast, and the average scores of eighth-graders increased in the Southeast.
- ☐ Fourth- and eighth-grade students in the Northeast and Central regions outperformed students in the West in 2001, and students in the Central region also outperformed their counterparts in the Southeast. Twelfth-graders in the Central region had higher average scores than twelfth-graders in the Southeast.

Parents' Highest Level of Education

- ☐ Twelfth-graders whose parents had not graduated from high school had higher average scores in 2001 than in 1994.
- ☐ The higher the parental education level reported, the higher the average score attained by students at both grades 8 and 12 in 2001.

Type of School

- ☐ Eighth-grade public school students had higher average scores in 2001 than in 1994.
- ☐ In 2001, nonpublic school students outperformed public school students at all three grades.
- ☐ In 2001, Catholic school students outperformed public school students at grades 4, 8, and 12. Apparent differences between public school and other nonpublic school students were not statistically significant.

Type of Location

- ☐ In 2001, students in rural and urban fringe locations had higher average scores than central city students at grades 4, 8, and 12.

Eligibility for Free/Reduced-Price Lunch

- ☐ At every grade in 2001, the average score for students who were eligible for the Free/Reduced-Price School Lunch program was lower than the average for students who were not eligible for the program (i.e., those above the poverty guidelines).

Classroom Contexts for Learning

NAEP collects information about the contexts for student learning by administering questionnaires to assessed students, their teachers, and their school administrators. Using the student as the unit of analysis, NAEP examines the relationship between selected contextual variables drawn from these questionnaires and students' average scores on the geography assessment.

Teacher Preparation

- ☐ Ninety-three percent of fourth-grade students had teachers who indicated their graduate/undergraduate major or minor was elementary education, and about one-quarter (28 percent) of eighth-grade students had teachers who indicated they had a graduate/undergraduate major or minor in geography or geography education.
- ☐ A higher percentage of fourth-grade students in 2001 had teachers who reported they were very prepared to teach geography than did students in 1994. Forty-four percent of eighth-grade students in 2001 had teachers who reported they were very prepared to teach geography.

Geography Skills Taught

- The percentage of eighth-grade students who studied maps and globes at least once or twice a week increased in 2001 as compared to 1994.
- There was an increase in the percentage of eighth- and twelfth-grade students who studied natural resources once or twice a week in 2001 as compared with 1994.
- The percentages of eighth-grade students who studied countries and cultures in their geography instruction at least once or twice a week were greater in 2001 than in 1994.

Geography Course-Taking

- A higher percentage of eighth-graders in 2001 reported taking geography in sixth, seventh, and eighth grades than did their counterparts in 1994.
- The percentage of twelfth-grade students taking geography courses at each grade level during their high school years increased in 2001 from the percentage reported in 1994.
- In 2001 at grade 8, students who reported taking two or three years of geography had higher scores than those who took it for fewer years. Twelfth-graders who reported taking one year or less of geography had higher average scores than those who took 3 or 4 years of geography.

Use of Computers

- Students at grades 4, 8, and 12 who used the Internet or CD-ROM materials to a small or moderate extent had higher scores than students who did not use these tools at all.

Becoming a More Inclusive NAEP

In the 2001 geography assessment, the NAEP program used a split-sample design, so that trends in students' geography achievement could be reported across assessment years and, at the same time, the program could continue to examine the effects of including special-needs students assessed with accommodations. Included in this report is an overview of the second set of results that include special-needs students who required and were provided accommodations during the assessment administration.

- In the sample where accommodations were not permitted, between 44 and 48 percent of the special-needs students at each of the three grade levels (between 5 and 8 percent of all students) were excluded from NAEP testing by their schools. In the sample where accommodations were offered, between 23 and 24 percent of the special-needs students were excluded from the assessment (between 2 and 4 percent of the total sample).
- At grade 8, the average score when accommodations were permitted was lower than the average score when accommodations were not permitted. At grades 4 and 12, there were no statistically significant differences between the average scores of students when accommodations were permitted and when accommodations were not permitted.

1

NAEP 2001 Geography Assessment

Introduction

After more than 50 years during which geography was largely replaced by social studies in American public schools, geography education began to experience a revival during the 1980s and 1990s.[1] Contributing to the change was a growing belief in the relevance of geography to addressing economic, political, and environmental issues at the national and global level. Moreover, geography education was increasingly seen as an essential tool in the creation of effective citizens. This process gained momentum through the work of various organizations concerned with geography and geography education. These groups encouraged a more positive attitude toward geography and provided important guidance for reestablishing geography in the school curriculum.[2] Two surveys of geographic literacy, in 1988 and 1994, provided statistical evidence that student knowledge and skills fell far short of what was needed for responsible citizenship.[3] By the end of 1990, Congress had authorized development of a broad-based National Assessment of Educational Progress (NAEP) geography assessment at

Chapter Focus

What is the NAEP geography assessment?

How does the NAEP geography assessment measure and report student progress?

Chapter Contents

Overview

Geography Framework

Geography Assessment

School and Student Samples

Reporting Results

NAEP Achievement Levels

Interpreting NAEP Results

This Report

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[1] Salter, C. L. (1990). *Missing the magic carpet: The real significance of geographic ignorance.* Princeton, NJ: Educational Testing Service.

[2] Joint Committee on Geographic Education. (1984). *Guidelines for geographic education: Elementary and secondary schools.* Washington, DC: Association of American Geographers and the National Council for Geographic Education.

[3] Allen, R., Bettis, N., Kurfman, D., MacDonald, W., Mullis, I.V. S., & Salter, C. (1990). *The geography learning of high school seniors.* Princeton, NJ: National Assessment of Educational Progress, Educational Testing Service.

Persky, H. R., Reese, C. M., O'Sullivan, C.Y., Lazer, S., Moore, J. D., & Shakrani, S. (1996). *NAEP 1994 geography report card.* Washington, DC: National Center for Education Statistics, Office of Educational Research and Improvement, U.S. Department of Education.

grades 4, 8, and 12, and the President and nation's governors had declared geography to be one of five core subjects in their National Education Goals.

Progress toward increasing the prominence of geography in the elementary and secondary school curriculum has generally been good. The 1990s saw the publication of the *Geography Framework for the 1994 National Assessment of Educational Progress* and the NAEP geography assessment in 1994, the introduction of the National Geography Standards, and the institution of the National Geographic Alliance Network.[4] The alliance is a professional organization encouraged and supported with grants from the National Geographic Society Education Foundation. Geographic Alliances are present in all 50 states, and are comprised of primary, secondary, community college, and university geography educators interested in the enhancement of geography education. The number of states with geography standards has been increasing steadily as well. According to recent data collected by the National Geographic Society, 48 states plus the District of Columbia now have geography standards in place, 37 of which are based on the National Geography Standards. However, only 13 states require a geography course as a requirement for high school graduation. Moreover, in 27 states geography is not tested in mandated state examinations, while in some other states the portion of mandated tests devoted to geography is very small. As a result, there could be little incentive for teachers to emphasize geography instruction when higher stakes are attached to other subjects.[5] The results from the 2001 NAEP geography assessment provide policymakers, educators, and the general public with a new, objective tool with which to evaluate the country's progress toward geographic literacy.

Overview of the 2001 National Assessment of Educational Progress

For over 30 years, the National Assessment of Educational Progress (NAEP) has been authorized by Congress to collect, analyze, and report reliable and valid information about what American students know and can do in core subject areas. NAEP assesses the performance of public and nonpublic school students in grades 4, 8, and 12. In 2001, student performance in geography and U.S. history was assessed at all three grades. This report deals only with the results of the geography assessment.

All NAEP assessments are based on content frameworks developed through a national consensus process. The NAEP 2001 geography assessment was the second administration of an assessment based on the *Geography Framework for the 1994 National Assessment of Educational Progress*, which was originally developed for the 1994 assessment.[6] In both 1994 and 2001, assessments based on the framework were administered to national samples of fourth-, eighth-, and twelfth-graders.

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[4] National Assessment Governing Board. (1994). *Geography framework for the 1994 National Assessment of Educational Progress*. Washington, DC: Author.

Geography Education Standards Project. (1994). *Geography for life: National geography standards*. Washington, DC: National Geographic Research and Exploration.

[5] Munroe, S. and Smith, T. (1998). State geography standards. *Fordham Report*, 2(2). http://www.edexcellence.net/standards/geography/geograph.htm.

Dean, A. (2002). Unpublished data. National Geographic Education Foundation.

Council of Chief State School Officers. (2000). *Key state education policies on K-12 education: 2000*. Washington, DC: Author.

[6] National Assessment Governing Board. (1994). *Geography framework for the 1994 National Assessment of Educational Progress*. Washington, DC: Author.

This report describes the results of the 2001 geography assessment at grades 4, 8, and 12 and compares results in 2001 to those in 1994. Comparisons across assessment years are possible because the assessments were developed under the same basic framework and share a common set of geography questions. In addition, the populations of students were sampled and assessed using comparable procedures.

The Geography Framework

Although NAEP had conducted a geography assessment at grade 12 in 1988, a more comprehensive NAEP geography framework was developed for the 1994 assessment. The new framework provided the operational specifications for both the 1994 and 2001 assessments. The development of the framework was managed by the Council of Chief State School Officers (CCSSO) and adopted by the National Assessment Governing Board (NAGB). Approximately 50 professional geographers, educators, administrators, and other interested individuals worked to achieve consensus on the general goals as well as the specific language of the framework. In addition, several hundred educational experts and interested members of the public contributed to the process, either by participating in public hearings or by reviewing drafts. The framework document produced by this consensus process called for the assessment of a broad range of outcomes. It represented an ambitious vision both of what students should know and be able to do in geography, and of the ways in which those competencies should be tested.

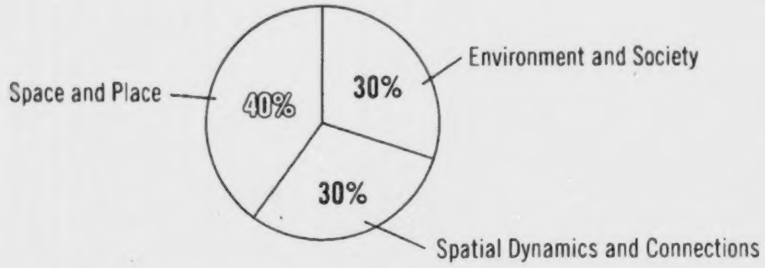
The geography framework is organized along two dimensions, a content dimension and a cognitive dimension. The content dimension forms the heart of the framework. It is divided into three main content areas covering the breadth of geography learning outcomes—knowledge and skills—that would flow from good geography instruction.

The geography framework specifies the percentage of assessment time to be devoted to each content area. Figure 1.1 shows how the assessment time is distributed for each of the three grades: 40

Figure 1.1

Distribution of Assessment Time

Distribution of assessment time by geography content area, grades 4, 8, and 12: 2001



SOURCE: National Assessment Governing Board, *Geography Framework for the 2001 National Assessment of Educational Progress.*

percent of assessment time goes to Space and Place, and 30 percent each to Environment and Society and to Spatial Dynamics and Connections. The percentages are important both because they guide the development of test questions and because they determine how much weight each content area receives in computing overall test scores. Figure 1.2 provides descriptions of each content area.

Figure 1.2

Content Area Descriptions

Descriptions of the three geography content areas

Space and Place:

Knowledge of geography as it relates to particular places on Earth, to spatial patterns on Earth's surface, and to physical and human processes that shape such spatial patterns.

Space is the basic resource and organizing element for geography. Patterns that are illustrated on maps reflect both natural features and human activities. This content area requires students to distinguish between and understand the spatial distribution of physical and human characteristics. Students must locate significant features and places on Earth, recognize existing patterns in the distribution of features and places, and comprehend the reasons for the development and existence of these patterns.

Environment and Society:

Knowledge of geography as it relates to the interactions between environment and society.

Geography is an integrative discipline that focuses on the interrelationships between the physical environment and society. Human adaptation to and modification of the environment have economic and political implications. Understanding the nature, scale, and ramifications of such environmental transformations is fundamental in geography education, and is the core of this content area. Students must be aware that every environmental issue lends itself to many interpretations, depending on the people's perspectives. Students must consider such multiple perspectives as they evaluate decisions about issues, such as land use and resource development, because the results of such decisions often have complicated and unpredictable consequences. Learning to make wise decisions concerning the costs and benefits of environmental modification is an expressed goal of geography education.

Spatial Dynamics and Connections:

Knowledge of geography as it relates to spatial connections among people, places, and regions.

This content area explores critical problems in human interaction. It requires students to demonstrate comprehension of cultural, economic, and political regions and the connections among them. Students must understand how peoples and places are alike and how they differ. They should know that people of every country and every nation are increasingly connected to and dependent upon other peoples and places of the world for both human and natural resources. In this content area, students must demonstrate the knowledge that the world's resources are unevenly distributed, and an understanding of how this contributes to the movements of people, patterns of trade, and conflict.

SOURCE: National Assessment Governing Board, *Geography Framework for the 1994 and 2001 National Assessment of Educational Progress.*

Three cognitive areas or levels comprise the cognitive dimension of the geography assessment. The framework labels them as Knowing, Understanding, and Applying, and defines them as follows.

Knowing—What is it? Where is it?

In this area, students are assessed on their ability to perform two related functions with respect to information: a) an observation function and b) a recall function. Students should be able to observe different elements of the landscape and answer questions by recalling, for example, the name of a place or a resource indigenous to a particular country or by finding information about trading patterns among several countries.

Understanding—Why is it there? How did it get there? What is its significance?

In this area, students attribute meaning to what has been observed and explain events. Putting events in context and explaining them requires students to see connections among diverse pieces of geographic information and to use that information to explain existing patterns and processes on Earth.

Applying—How can knowledge and understanding be used to solve geographic problems?

Applying geography knowledge and understanding requires a range of higher-order thinking skills. Students classify, hypothesize, use inductive and deductive reasoning, and form problem-solving models. They use many tools and skills of geography as they attempt to develop a comprehensive understanding en route to proposing viable solutions.

Student performance in the three cognitive areas was not reported on separate subscales. Rather, the three areas were used to help guide development of the assessment instrument. The percentages of assessment time to be devoted to each cognitive area, as specified in the framework, are displayed in table 1.1.

Together the content and cognitive dimensions of the assessment form a matrix in which each content area is measured at each cognitive level.

Table 1.1 Geography Assessment Time Across Cognitive Areas

Distribution of geography assessment time across cognitive areas, grades 4, 8, and 12: 2001

	Knowing	*Understanding*	*Applying*
Grade 4	45%	30%	25%
Grade 8	40%	30%	30%
Grade 12	30%	30%	40%

SOURCE: National Assessment Governing Board, *Geography Framework for the 1994 and 2001 National Assessment of Educational Progress.*

Geography Assessment Instruments

As the only federally authorized ongoing assessment of geography achievement, NAEP must reflect the spirit of the framework as well as the specifications provided by it. In order to achieve those goals, the assessment development process involved stages of review by measurement experts and a committee of teachers, teacher educators, and curriculum specialists expert in geography. All components of the assessment were evaluated for curricular relevance, developmental appropriateness, and fairness. The National Assessment Governing Board (NAGB) gave final approval for NAEP test questions. A list of the geography development committee members for the 2001 assessment is provided in appendix C.

The 2001 geography assessment booklets at grades 4, 8, and 12 contained either three or four sections: a set of general background questions, a set of subject-related background questions, and one or two sets, or "blocks," of cognitive questions assessing knowledge and skills in geography. The general background questions are used to collect some important basic information about students. These questions tend to remain fairly constant across different NAEP assessments. The subject-related questions are designed for specific assessments or for assessments given in an individual year. The questions in the geography assessment asked students to give information about their school practices, such as the frequency with which they used the Internet or a CD-ROM to study geography, how often they received instruction in using maps and globes, and when they had taken a geography course. All students participating in the geography assessment at a particular grade received the same background questions.

The geography assessment as a whole contained 91 questions at grade 4, 124 questions at grade 8, and 123 questions at grade 12. The grade 4 assessment was divided into six 25-minute blocks, while both the grade 8 and grade 12 assessments contained nine blocks, eight of which were 25-minute blocks and one of which was a 50-minute block. However, to reduce the burden on individuals, each student answered only a small portion of the total number of questions—either two 25-minute blocks or one 50-minute block. The 50-minute blocks administered at grades 8 and 12 focused on a particular geographic topic. In addition, one block at each grade was based entirely upon a student atlas that was provided to students. The assessment time for each grade, therefore, was 50 minutes plus the 10-15 minutes needed to complete the background questions.

Each block of geography questions consisted of both multiple-choice and "constructed-response" questions. ("Constructed response" is the term used to describe test questions in which students produce their own response, as distinct from multiple-choice questions, in which students choose an answer from one of several options.) Typically, a block will contain about 16–18 questions, but there is considerable variation depending on the balance between multiple-choice and constructed-response questions. Overall, more than 50 percent of student assessment time was devoted to the latter question type. In addition, of the time reserved for constructed-response questions approximately 20 percent was used for "production" questions in which students engaged in such tasks as indicating place locations on outline maps, drawing routes between points on a map, and drawing maps and diagrams based upon written descriptions. Two types of constructed-response questions were used:

☐ short-constructed-response questions that required students to provide brief written answers of one or two sentences or complete a limited production task; and

☐ extended-constructed-response questions that required students to provide answers of a paragraph or more in length or engage in an extensive production task like producing a map.

Examples of multiple-choice, short- and extended-constructed-response and production questions are provided in chapter 6. Additional information about the design of the 2001 geography assessment is presented in appendix A.

Description of School and Student Samples

The NAEP 2001 geography assessment included representative samples of both public and nonpublic schools. For the reporting sample, approximately 7,000 fourth-graders, 9,000 eighth-graders, and 9,000 twelfth-graders were assessed. The number of schools in the reporting sample were 365 at fourth grade, 369 at eighth grade, and 374 at twelfth grade. Each selected school that participated in the assessment and each student assessed represent a portion of the population of interest. For additional information on sample sizes and participation rates, see appendix A.

This report contains two different sets of national results based on two reporting samples that differed in terms of whether or not accommodations were made available to special-needs students. The national results presented in chapters 2, 3, 4, and 6 of this report are based on a nationally representative sample that included special-needs students only if they could be assessed meaningfully without accommodations. These results can be compared to those from 1994 because accommodations were also not made available in that assessment year. Chapter 5 presents a second set of national results from 2001 for a representative sample that includes the performance of students who required and were provided with accommodations (e.g., bilingual dictionary, extended time, small group testing). No comparison of these results to those from 1994 can be made because of the inclusion of these accommodated special-needs students.

In the sample that did not permit accommodations, 8 percent of fourth-graders, 8 percent of eighth-graders, and 5 percent of twelfth-graders were excluded from the geography assessment in 2001. School staff familiar with these students made the determination, based upon NAEP's inclusion criteria, that these students could not be assessed meaningfully without accommodations because of their disability and/or limited English proficiency. In 1994, 5 percent at both the fourth- and eighth-grades, and 3 percent at the twelfth-grade were excluded. Additional information regarding exclusion rates is provided in appendix A.

Reporting the Assessment Results

Student performance on the NAEP geography assessment is presented in two ways: as average scores on the NAEP geography scale, and in terms of the percentage of students attaining NAEP geography achievement levels. The average scale scores are a measure of what students know and can do in geography. The achievement-level results indicate the degree to which students' performance meets expectations of what they should know and be able to do.

Average scale score results are presented on the NAEP geography composite scale, which ranges from 0–500. Students' responses on the NAEP 2001 geography assessment were analyzed to determine the percentages of students that responded correctly to each multiple-choice question and the percentages of students that responded at each score level for the constructed-response questions. Scales that summarize results for each of the three content areas described earlier were created. The composite scale is a weighted average of the separate subscales for the three content areas. The weight for each content area corresponds to its relative importance as prescribed in the NAEP geography framework. A full description of NAEP scale procedures can be found in the forthcoming *NAEP 2001 Technical Report*.

Achievement-level results are presented in terms of geography achievement levels as authorized by the NAEP legislation and adopted by the National Assessment Governing Board (NAGB).[7] For each grade tested, NAGB has adopted three achievement levels: *Basic*, *Proficient*, and *Advanced*. For reporting purposes, the achievement-level cut scores are placed on the geography scale, resulting in four ranges: below *Basic*, *Basic*, *Proficient*, and *Advanced*.

The Setting of Achievement Levels

The 1988 NAEP legislation that created the National Assessment Governing Board directed the Board to identify "appropriate achievement goals...for each subject area" that NAEP measures.[8] The 2001 NAEP reauthorization reaffirmed many of the Board's statutory responsibilities, including developing "appropriate student achievement levels for each grade or age in each subject area to be tested . . . "[9] To follow this directive and achieve the mandate of the 1988 statute to "improve the form and use of NAEP results," NAGB undertook the development of student performance standards called "achievement levels." Since 1990 the Board has adopted achievement levels in mathematics, reading, U.S. history, geography, science, writing, and civics.

The Board defined three levels for each grade: *Basic*, *Proficient*, and *Advanced*. The *Basic* level denotes partial mastery of the knowledge and skills that are fundamental for proficient work at a given grade. The *Proficient* level represents solid academic performance. Students reaching this level demonstrate competency over challenging subject matter. The *Advanced* level presumes mastery of both the *Basic* and *Proficient* levels and superior performance. Figure 1.3 presents the policy definitions of the achievement levels that apply across all grades and subject areas. The policy definitions guided the development of the geography achievement levels, as well as the achievement levels established in all other subject areas. Adopting three levels of achievement for each grade signals the importance of looking at more than one standard of performance. The Board believes, however, that all students should reach the *Proficient* level: the *Basic* level is not the desired goal, but rather represents partial mastery that is a step toward *Proficient*.

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[7] No Child Left Behind Act of 2001: Reauthorization of the Elementary and Secondary Education Act. Pub. L. No. 107-110 (H.R. 1).

National Assessment of Educational Progress Improvement Act of 1988. Pub. L. No. 100-297, 20, U.S.C. 1211.

[8] National Assessment of Educational Progress Improvement Act of 1988. Pub. L. No. 100-297, 20, U.S.C. 1211.

[9] No Child Left Behind Act of 2001: Reauthorization of the Elementary and Secondary Education Act. Pub. L. No. 107-110 (H.R. 1).

Figure 1.3

Achievement Levels

Policy definitions of the three NAEP achievement levels

Basic	This level denotes partial mastery of prerequisite knowledge and skills that are fundamental for proficient work at each grade.
Proficient	This level represents solid academic performance for each grade assessed. Students reaching this level have demonstrated competency over challenging subject matter, including subject-matter knowledge, application of such knowledge to real-world situations, and analytical skills appropriate to the subject matter.
Advanced	This level signifies superior performance.

SOURCE: National Assessment Governing Board.

The achievement levels in this report were adopted by the Board based on a standard-setting process designed and conducted under a contract with ACT, Inc. To develop these levels, ACT convened a cross section of educators and interested citizens from across the nation and asked them to judge what students should know and be able to do relative to a body of content reflected in the NAEP framework for geography. This achievement-level-setting process was reviewed by a variety of individuals including policymakers, representatives of professional organizations, teachers, parents, and other members of the general public. Prior to adopting these levels of student achievement, NAGB engaged a large number of persons to comment on the recommended levels and to review the results.

The results of the achievement-level-setting process, after NAGB's approval, became a set of achievement-level descriptions and a set of achievement-level cut points on the 0–500 NAEP geography scale. The cut points are the scores that define the boundaries between below *Basic*, *Basic*, *Proficient*, and *Advanced* performance at grades 4, 8, and 12. The Board established these geography achievement levels based upon the geography content framework.

Achievement-Level Descriptions for Each Grade

Specific definitions of the *Basic*, *Proficient*, and *Advanced* geography achievement levels for grades 4, 8, and 12 are presented in figures 1.4 through 1.6. As noted previously, the achievement levels are cumulative. Therefore, students performing at the *Proficient* level also display the competencies associated with the *Basic* level, and students at the *Advanced* level also demonstrate the skills and knowledge associated with both the *Basic* and the *Proficient* levels. For each achievement level listed in figures 1.4 through 1.6, the scale score that corresponds to the beginning of that level is shown in parentheses. For example, in figure 1.4 the scale score of 240 corresponds to the beginning of the grade 4 *Proficient* level of achievement.

Figure 1.4

Descriptions of NAEP geography achievement levels for grade 4

Achievement Levels	
Basic (187)	Students should be able to use words or diagrams to define basic geography vocabulary; identify personal behaviors and perspectives related to the environment, and describe some environmental and cultural issues in their community; use visual and technology tools to access information; identify major geographic features on maps and globes; be able to read and draw simple maps, map keys, and legends; demonstrate how people depend upon, use, and adapt to the environment; and give examples of the movement of people, goods, services, and ideas from one place to another. In addition to demonstrating an understanding of how individuals are alike and different, they should demonstrate a knowledge of the ways people depend on each other.
Proficient (240)	Students should be able to use fundamental geographic knowledge and vocabulary to identify basic geographic patterns and processes; describe an environmental or cultural issue from more than one perspective; and read and interpret information from visual and technological tools such as photograph maps and globes, aerial photography, and satellite images. They should be able to use number and letter grids to plot specific locations; understand relative location terms; and sketch simple maps and describe and/or draw landscapes they have observed or studied. *Proficient* students should be able to illustrate how people depend upon, adapt to, and modify the environment, describe and/or illustrate geographic aspects of a region using fundamental geographic vocabulary and give reasons for current human migration; discuss the impact a location has upon cultural similarities and differences; and be able to demonstrate how an event in one location can have an impact upon another location.
Advanced (276)	Students should be able to use basic geographic knowledge and vocabulary to describe global patterns and processes; describe ways individuals can protect and enhance environmental quality; describe how modifications to the environment may have a variety of consequences; explain differing perspectives that apply to local environmental or cultural issues; and demonstrate an understanding of forces that result in migration, changing demographics, and boundary changes. They should be able to solve simple problems by applying information learned through working with visual and technological tools such as aerial and other photographs, maps and globes, atlases, news media, and computers. They should be able to construct models and sketch and label maps of their own state, the United States, and the world; use them to describe and compare differences, similarities, and patterns of change in landscapes; and be able to predict the impact a change one location can have on another. They should be able to analyze the ways individuals and groups interact.

SOURCE: National Assessment Governing Board, *Geography Framework for the 1994 and 2001 National Assessment of Educational Progress.*

Figure 1.5 Achievement Levels	Descriptions of NAEP geography achievement levels for grade 8
Basic (242)	Students should possess fundamental knowledge and vocabulary of concepts relating to patterns, relationships, distance, directions, scale, boundary, site, and situation; solve fundamental locational questions using latitude and longitude; interpret simple map scales; identify continents and their physical features, oceans, and various cities; respond accurately to descriptive questions using information obtained by use of visual and technological tools such as geographic models and/or translate that information into words; explain differences between maps and globes; and find a wide range of information using an atlas or almanac. Students should be able to recognize and illustrate the relationships that exist between humans and their environments, and provide evidence showing how physical habitat can influence human activity. They should be able to define a region and identify its distinguishing characteristics. Finally, they should be able to demonstrate how the interaction that takes place between and among regions is related to the movement of people, goods, services, and ideas.
Proficient (282)	Students should possess a fundamental geographic vocabulary; understand geography's analytical concepts; solve locational questions requiring integration of information from two or more sources, such as atlases or globes; compare information presented at different scales; and identify a wide variety of physical and cultural features and describe regional patterns. Students should be able to respond accurately to interpretive questions using geography's visual and technological tools and translate that information into patterns; identify differences in map projections and select proper projections for various purposes; and develop a case study working with geography's analytical concepts. In addition, students should be able to describe the physical and cultural characteristics of places; explain how places change due to human activity; and explain and illustrate how the concept of regions can be used as a strategy for organizing and understanding Earth's surface. Students should be able to analyze and interpret data bases and case studies, as well as use information from maps to describe the role that regions play in influencing trade and migration patterns and cultural and political interaction.
Advanced (315)	Students should have a command of extensive geographic knowledge, analytical concepts, and vocabulary; be able to analyze spatial phenomena using a variety of sources with information presented at a variety of scales and show relationships between them; and use case studies for special analysis and to develop maps and other graphics. Students should be able to identify patterns of climate, vegetation, and population across Earth's surface and interpret relationships between and among these patterns, and use one category of a map or aerial photograph to predict other features of a place such as vegetation based on climate or population density based on topographic features. Students should also be able to relate the concept of region to specific places and explain how regions change over time due to a variety of factors. They should be able to profile a region of their own design using geographic concepts, tools, and skills.

SOURCE: National Assessment Governing Board, *Geography Framework for the 1994 and 2001 National Assessment of Educational Progress*

Figure 1.6

Descriptions of NAEP geography achievement levels for grade 12

Achievement Levels	
Basic (270)	Students should possess a knowledge of concepts and terms commonly used in physical and human geography as well as skills enabling them to employ applicable units of measurement and scale when solving simple locational problems using maps and globes. They should be able to read maps; provide examples of plains, plateaus, hills, and mountains; and locate continents, major bodies of water, and selected countries and cities. They should be able to interpret geographic data and use visual and technological tools such as charts, tables, cartograms, and graphs; know the nature of and be able to identify several basic types of map projection; understand the basic physical structure of the planet; explain and apply concepts such as continental drift and plate tectonics; and describe geography's analytical concepts using case studies. Students should have a comprehensive understanding of spatial relationships including the ability to recognize patterns that exist across Earth in terms of phenomena, including climate regions, time zones, population distributions, availability of resources, vegetation zones, and transportation and communication networks. They should be able to develop data bases about specific places and provide a simple analysis about their importance.
Proficient (305)	Students should have an extensive understanding and knowledge of the concepts and terminology of physical and human geography. They should be able to use geographic concepts to analyze spatial phenomena and to discuss economic, political, and social factors that define and interpret space. They should be able to do this through the interpretation of maps and other visual and technological tools, through the analysis of case studies, the utilization of data bases, and the selection of appropriate research materials. Students should be able to design their own maps based on descriptive data; describe the physical and cultural attributes of major world regions; relate the spatial distribution of population to economic and environmental factors; and report both historical and contemporary events within a geographic framework using tools such as special purpose maps, and primary and secondary source materials.
Advanced (339)	Students should possess a comprehensive understanding of geographic knowledge and concepts; apply this knowledge to case studies; formulate hypotheses and test geographic models that demonstrate complex relationships between physical and human phenomena; apply a wide range of map skills; develop maps using fundamental cartographic principles including translating narratives about places and events into graphic representations, and use other visual and technological tools to perform locational analysis and interpret spatial relationships. Students should also be able to undertake sophisticated analysis from aerial photographs or satellite imagery and other visuals. *Advanced* students should be able to develop criteria assessing issues relating to human spatial organization and environmental stability and, through research skills and the application of critical thinking strategies, identify alternative solutions. They should be able to compile data bases from disparate pieces of information and from these data bases develop generalizations and speculations about outcomes when data change.

SOURCE: National Assessment Governing Board, *Geography Framework for the 1994 and 2001 National Assessment of Educational Progress.*

The Trial Status of Achievement Levels

The 2001 NAEP reauthorization law requires that the achievement levels be used on a trial basis until the Commissioner of Education Statistics determines that the achievement levels are "reasonable, valid, and informative to the public."[10] Until that determination is made, the law requires the Commissioner and the Board to state clearly the trial status of the achievement levels in all NAEP reports.

In 1993, the first of several congressionally mandated evaluations of the achievement-level-setting process concluded that the procedures used to set the achievement levels were flawed and that the percentage of students at or above any particular achievement-level cutpoint may be underestimated.[11] Others have critiqued these evaluations, asserting that the weight of the empirical evidence does not support such conclusions.[12]

In response to the evaluations and critiques, NAGB conducted an additional study of the 1992 reading achievement levels before deciding to use those reading achievement levels for reporting 1994 NAEP results.[13] When reviewing the findings of this study, the National Academy of Education (NAE) Panel expressed concern about what it saw as a "confirmatory bias" in the study and about the inability of this study to "address the panel's perception that the levels had been set too high."[14] In 1997, the NAE Panel summarized its concerns with interpreting NAEP results based on the achievement levels as follows:

> *First, the potential instability of the levels may interfere with the accurate portrayal of trends. Second, the perception that few American students are attaining the higher standards we have set for them may deflect attention to the wrong aspects of education reform. The public has indicated its interest in benchmarking against international standards, yet it is noteworthy that when American students performed very well on a 1991 international reading assessment, these results were discounted because they were contradicted by poor performance against the possibly flawed NAEP reading achievement levels in the following year.*[15]

The National Center for Education Statistics and the National Assessment Governing Board have sought and continue to seek new and better ways to set performance standards on NAEP.[16] For example, NCES and NAGB jointly sponsored a national conference on standard setting in large-scale assessments, which explored many issues related to standard setting.[17] Although new directions were presented and discussed, a proven alternative to the current process has not yet been identified. The Deputy Commissioner of Education Statistics and the Board continue to call on the research community to assist in finding ways to improve standard setting for reporting NAEP results.

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[10] No Child Left Behind Act of 2001: Reauthorization of the Elementary and Secondary Education Act. Pub. L. No. 107-110 (H.R. 1).

[11] United States General Accounting Office. (1993). *Education achievement standards: NAGB's approach yields misleading interpretations.* U.S. General Accounting Office Report to Congressional Requestors. Washington, DC: Author.

National Academy of Education. (1993). *Setting performance standards for achievement: A report of the National Academy of Education Panel on the evaluations of the NAEP Trial State Assessment: An evaluation of the 1992 achievement levels.* Stanford, CA: Author.

[12] Cizek, G. (1993). *Reactions to National Academy of Education report.* Washington, DC: National Assessment Governing Board.

Kane, M. (1993). *Comments on the NAE evaluation of the NAGB achievement levels.* Washington, DC: National Assessment Governing Board.

[13] American College Testing. (1995). *NAEP reading revisited: An evaluation of the 1992 achievement level descriptions.* Washington, DC: National Assessment Governing Board.

[14] National Academy of Education. (1996). Reading achievement levels. In *Quality and utility: The 1994 Trial State Assessment in reading. The fourth report of the National Academy of Education Panel on the evaluation of the NAEP Trial State Assessment.* Stanford, CA: Author.

[15] National Academy of Education. (1997). *Assessment in transition: Monitoring the nation's educational progress* (p. 99). Mountain View, CA: Author.

The most recent congressionally mandated evaluation conducted by the National Academy of Sciences (NAS) relied on prior studies of achievement levels, rather than carrying out new evaluations, on the grounds that the process has not changed substantially since the initial problems were identified. Instead, the NAS Panel studied the development of the 1996 science achievement levels. The NAS Panel basically concurred with earlier congressionally mandated studies. The Panel concluded that "NAEP's current achievement-level-setting procedures remain fundamentally flawed. The judgment tasks are difficult and confusing; raters' judgments of different item types are internally inconsistent; appropriate validity evidence for the cut scores is lacking; and the process has produced unreasonable results."[18]

The NAS Panel accepted the continuing use of achievement levels in reporting NAEP results on a developmental basis, until such time as better procedures can be developed. Specifically, the NAS Panel concluded that "....tracking changes in the percentages of students performing at or above those cut scores (or, in fact, any selected cut scores) can be of use in describing changes in student performance over time."[19]

The National Assessment Governing Board urges all who are concerned about student performance levels to recognize that the use of these achievement levels is a developing process and is subject to various interpretations. The Board and the Deputy Commissioner believe that the achievement levels are useful for reporting trends in the educational achievement of students in the United States.[20] In fact, achievement-level results have been used in reports by the President of the United States, the Secretary of Education, state governors, legislators, and members of Congress. Government leaders in the nation and in more than 40 states use these results in their annual reports.

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[16] Reckase, Mark, D. (2000). *The evolution of the NAEP achievement levels setting process: A summary of the research and development efforts conducted by ACT.* Iowa City, IA: ACT, Inc.

[17] National Assessment Governing Board and National Center for Education Statistics. (1995). *Proceedings of the joint conference on standard setting for large-scale assessments of the National Assessment Governing Board (NAGB) and the National Center for Education Statistics* (NCES). Washington, DC: Government Printing Office.

[18] Pellegrino, J.W., Jones, L.R., & Mitchell, K.J. (Eds.). (1998). *Grading the nation's report card: evaluating NAEP and transforming the assessment of educational progress.* Committee on the Evaluation of National Assessments of Educational Progress, National Research Council. (p.182). Washington, DC: National Academy Press.

[19] Ibid., page 176.

[20] Forsyth, Robert A. (2000). A description of the standard-setting procedures used by three standardized test publishers. In *Student performance standards on the National Assessment of Educational Progress: Affirmations and improvements.* Washington, DC: National Assessment Governing Board.

Nellhaus, Jeffrey M. (2000). States with NAEP-like performance standards. In *Student performance standards on the National Assessment of Educational Progress: Affirmations and improvements.* Washington, DC: National Assessment Governing Board.

However, based on the congressionally mandated evaluations so far, the Deputy Commissioner agrees with the National Academy's recommendation that caution needs to be exercised in the use of the current achievement levels. Therefore, the Deputy Commissioner concludes that these achievement levels should continue to be used on a trial basis and should continue to be interpreted with caution.

Interpreting NAEP Results

The average scores and percentages presented in this report are estimates based on samples of students rather than on entire populations. Moreover, the collection of questions used at each grade level is but a sample of the many questions that could have been asked to assess student knowledge of the framework content. As such, the results are subject to a measure of uncertainty, reflected in the standard error of the estimates—a range of a few points plus or minus the score—which accounts for potential score fluctuation due to sampling error and measurement error. The standard errors for the estimated scale scores and percentages in this report are provided in appendix B.

The differences between scale scores and between percentages discussed in the following chapters take into account the standard errors associated with the estimates. Comparisons are based on statistical tests that consider both the magnitude of the difference between the group average scores or percentages and the standard errors of those statistics. Estimates based on smaller subgroups are likely to have relatively large standard errors. As a consequence, some seemingly large differences may not be statistically significant. When this is the case, the term "apparent differences" is used in this report. Throughout this report, differences between scores or between percentages are pointed out only when they are significant from a statistical perspective. All differences reported are significant at the 0.05 level with appropriate adjustments for multiple comparisons. The term "significant" identifies statistically dependable population differences to help inform dialogue among policymakers, educators, and the public.

Readers are cautioned against interpreting NAEP results in a causal sense. Inferences related to student subgroup performance or to the effectiveness of public and nonpublic schools, for example, should take into consideration the many socioeconomic and educational factors that may also affect performance in geography.

Overview of the Remaining Report

The results in chapters 2, 4 and 6 of this report are based on the set of data with no accommodations offered to students. Findings are presented for the nation and for all the major reporting subgroups included in all NAEP report cards. Comparisons with results from the 1994 assessment are noted where the data permit. Chapter 4 examines contexts for learning geography in terms of classroom practices and student variables.

NAEP has sought to assess samples that are as inclusive as possible. Nevertheless, there has always been some exclusion of students with disabilities (SD) and limited English proficient (LEP) students who could not be assessed meaningfully without accommodations. Local school officials have made decisions about exclusion in accordance with explicit criteria provided by NAEP. In order to expand the proportion of students who can be assessed meaningfully, NAEP began in recent assessments to explore the use of accommodations with special-needs students. Chapter 5 presents an overview of a second set of results—those that include students who were provided accommodations during the test administration. By including these results in the nation's geography report card, NAEP continues a phased transition toward a more inclusive reporting sample. Future assessment results will be based solely on a student and school sample in which accommodations are permitted.

Chapter 6 provides sample assessment questions and student responses from the 2001 assessment. Also presented in chapter 6 are item maps that position selected question descriptions along the NAEP geography scale where they are likely to be answered successfully by students. The descriptions used on these item maps focus on the geography skills or knowledge needed to answer the question. The data presented in both chapters 4 and 6 are based on the set of results that did not include accommodated special-needs students.

This report also contains appendices that support or augment the results presented. Appendix A contains an overview of the NAEP geography framework and specifications, information on the national sample, and a more detailed description of the major reporting subgroups featured in chapters 2 and 3. Appendix B contains the full data with standard errors for all tables and figures in this report. Appendix C contains a list of the NAEP geography committee members.

2

Average Scale Score and Achievement-Level Results for the Nation

Overview

This chapter presents the NAEP 2001 geography assessment results for the nation at grades 4, 8, and 12. Student performance is described by average scale scores on the NAEP geography composite scale, which ranges from 0 to 500, and in terms of percentages of students who attained each of the three geography achievement levels: *Basic*, *Proficient*, and *Advanced*. Results of the NAEP 2001 geography assessment are compared with results from the NAEP geography assessment given in 1994. This comparison is possible because the assessments share a common set of geography exercises based on the current geography framework and because the populations of students were sampled and assessed using comparable procedures. The results for this chapter are based on testing conditions comparable to those offered in 1994 when accommodations for special-needs students were not offered. Special-needs students who could participate without accommodations were included. A second set of results were obtained in 2001 that includes the performance of students who required and were provided accommodations. Results for the 2001 assessment that include special-needs students tested with accommodations are presented in chapter 5.

Chapter Focus

Are the nation's fourth-, eighth-, and twelfth-graders making progress in geography?

Chapter Contents

Overview

Average Scale Score Results

Scale Scores by Percentile

Achievement-Level Results

Average Scale Score Results

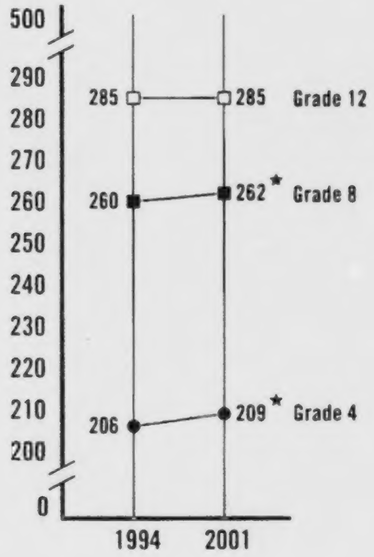
The results of the 2001 geography assessment show higher average scores than the results in 1994 at grades 4 and 8, and no statistically significant change at grade 12.

As seen in figure 2.1, the average score of fourth-graders rose from 206 to 209, and the average score of eighth-graders rose from 260 to 262.

Figure 2.1

National Scale Score Results

Average geography scale scores, grades 4, 8, and 12: 1994 and 2001



★ Significantly different from 1994.

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and 2001 Geography Assessments.

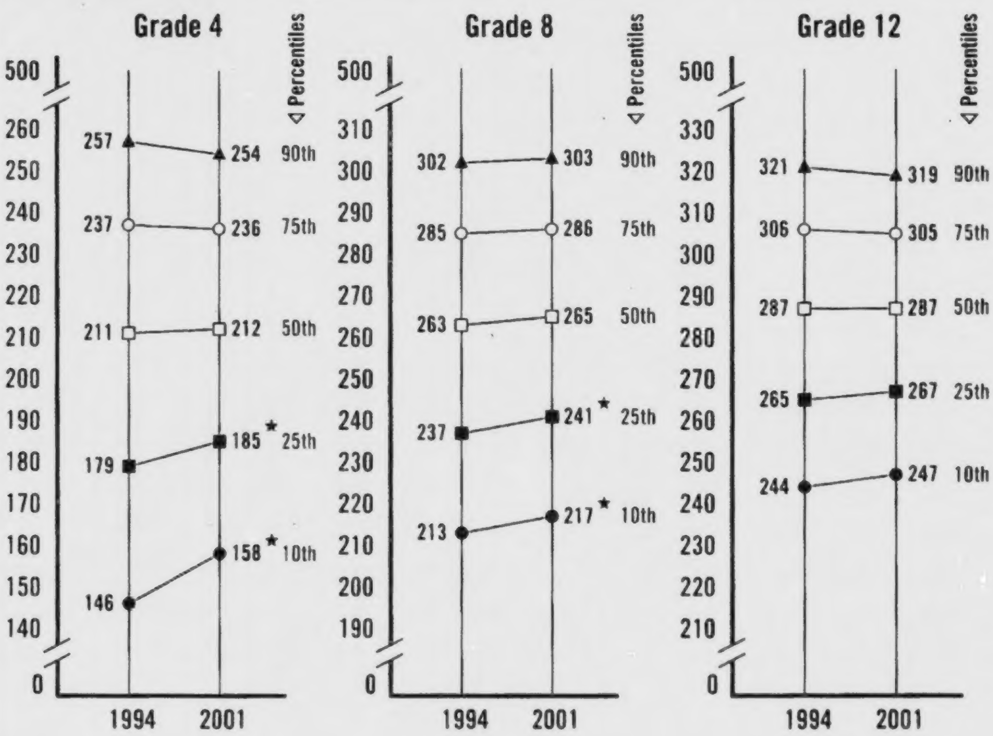
Scale Scores by Percentile

An examination of percentile scores provides additional information about student performance across the score distribution. The percentile indicates the percentage of students whose scores fell below a particular point on the NAEP geography scale. The advantage of viewing percentile scores is that they show how students with lower or higher ability performed compared to the national average. In addition, the percentile data show whether trends in the national average scores are reflected in scores at other levels of the performance distribution. Figure 2.2 shows the geography scale scores for grades 4, 8, and 12 at the 10th, 25th, 50th, 75th, and 90th percentiles for the 1994 and 2001 assessments.

Figure 2.2

National Performance Distribution

Geography scale score percentiles, grades 4, 8, and 12: 1994 and 2001



* Significantly different from 1994.

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and 2001 Geography Assessments.

At grades 4 and 8, scores at the two lowest percentiles (10th and 25th) were higher in 2001 than in 1994, suggesting that much of the improvement seen at grades 4 and 8 was concentrated among the lower-performing students. Other apparent changes at these two grades were not statistically significant. At grade 12, consistent with national average score results, none of the apparent differences in percentile scores was statistically significant.

Achievement-Level Results

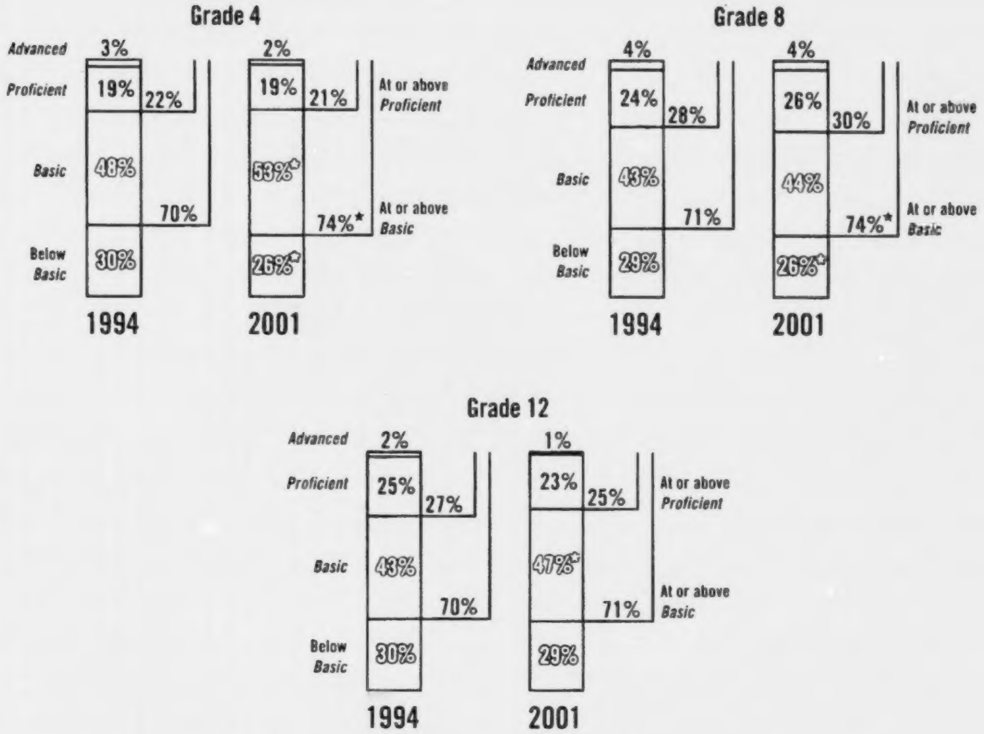
The results of student performance are not only reported using scores on the NAEP geography scale, but also using geography achievement levels. The achievement levels are performance standards adopted by the National Assessment Governing Board (NAGB), based on the collective judgments of experts about what students should be expected to know and be able to do. Viewing student performance from this perspective provides some insight into the adequacy of students' knowledge and skills and the extent to which they achieved expected levels of performance. A discussion of the trial status of achievement levels is in chapter 1.

Figure 2.3 presents achievement-level results for grades 4, 8, and 12. The results are shown in two ways: 1) the percentage of students within each achievement-level interval, and 2) the percentage of students at or above the *Basic* level and at or above the *Proficient* level. The text that follows discusses significant differences at or above *Basic* and *Proficient,* which are marked with * in the figures. Differences within achievement levels are not discussed although they are shown in the figures. In reading figure 2.3, it is necessary to keep in mind that the percentages at or above specific achievement levels are cumulative. Included among the percentage of students at or above the *Basic* level are also those who have achieved the *Proficient* and *Advanced* levels of performance, and included among students at or above the *Proficient* level are also those who have attained the *Advanced* level of performance.

Figure 2.3

National Achievement-Level Results

Percentage of students within and at or above geography achievement levels, grades 4, 8, and 12: 1994 and 2001



★ Significantly different from 1994.

NOTE: Percentages within each geography achievement level may not add to 100, or to the exact percentages at or above achievement levels, due to rounding.

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and 2001 Geography Assessments.

The NAGB has identified the *Proficient* achievement level as the minimum level at which all students should perform. In 2001, 21 percent of fourth-graders, 30 percent of eighth-graders, and 25 percent of twelfth-graders were at or above the *Proficient* level. Across years, the improvement in performance seen in the fourth- and eighth-grade average scale scores is reflected in achievement-level performance. Both grades show an increase from 1994 to 2001 in the percentage of students at or above *Basic* and a decrease in the percentage of students below *Basic*. As in 1994, only a small percentage of students at any grade reached the *Advanced* level in 2001: 2 percent at fourth grade, 4 percent at eighth grade, and 1 percent at twelfth grade.

3

Average Scale Scores and Achievement-Level Results for Selected Subgroups

In addition to reporting on the performance of all students, NAEP also provides results for various subgroups of students at each grade. Examining subgroup results provides insight, not only into how these groups of students performed in comparison to one another, but also into how each group has progressed over time. In light of recent educational reform efforts that focus on improving the achievement of all students, the information presented in this chapter serves as a valuable indicator on the nation's progress in meeting its educational goals.

Results for the NAEP 2001 geography assessment are presented by gender, race/ethnicity, region of the country, parents' highest level of education, type of school, type of location, students' eligibility for the Free/Reduced-Price School Lunch program. For all subgroups except type of location and free/reduced-price school lunch eligibility, results of the 2001 assessment are compared with those of the 1994 assessment.

Differences reported in this chapter between demographic subgroups for the 2001 assessment and between the 2001 and 1994 assessments are based on statistical tests that consider both the magnitude of the difference between the group average scores or percentages and the standard errors of those statistics. Differences

Chapter Focus

Are selected subgroups of students making progress in geography?

Chapter Contents

Gender

Race/Ethnicity

Region of the Country

Parents' Education

Type of School

Type of Location

Eligibility for Free/Reduced-Price School Lunch Program

between groups and between assessment years are discussed only if they have been determined to be statistically significant. Throughout this chapter, differences between 1994 and 2001 are marked in the figures. Differences within 2001 are not marked, but where such differences are discussed in the text, they are statistically significant. Furthermore, the reader should bear in mind that differences in performance among subgroups of students may reflect a range of socioeconomic and educational factors not addressed in this report or by NAEP.

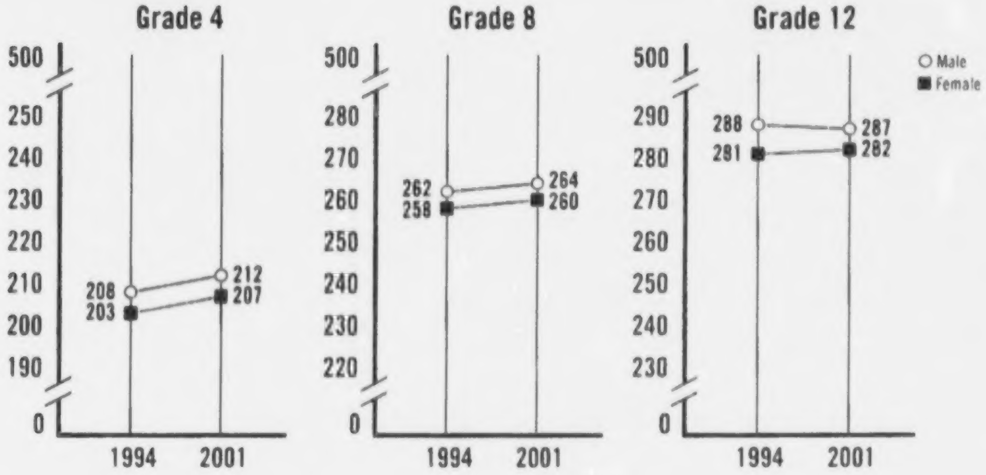
Gender

Figure 3.1 presents average geography scores for male and female students across assessment years. There was no statistically significant change from 1994 to 2001 in the average scores of either male or female students at any of the three grades. Although the scale score differences across years by gender were similar to the change across years for the population as a whole, the smaller sample sizes and the generally larger standard errors in the two subgroups prevented the results of the statistical tests from reaching the "significant" level in

Figure 3.1

National Scale Score Results by Gender

Average geography scale scores by gender, grades 4, 8, and 12: 1994 and 2001



SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and 2001 Geography Assessments.

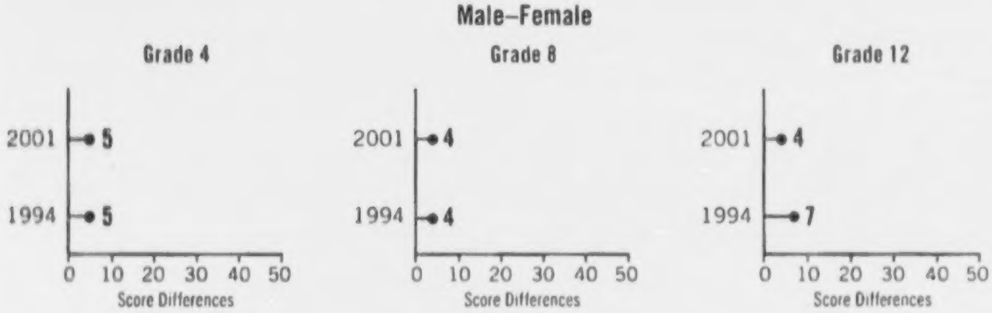
these comparisons. In 2001, male students at all three grades had higher average scores than female students, just as they had in 1994.

The performance of subgroups on the geography assessment can also be compared by determining if a difference or "gap" exists between subgroups' average scores and, if it does, whether that gap increases or decreases between assessment years. Figure 3.2 shows that there was no statistically significant change since 1994 in the differences between the average scores of male and female students at any of the three grades.

Figure 3.2

National Scale Score Differences by Gender

Differences in average geography scale scores by gender, grades 4, 8, and 12: 1994 and 2001



NOTE: Score differences are calculated based on differences between unrounded average scale scores.
SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and 2001 Geography Assessments.

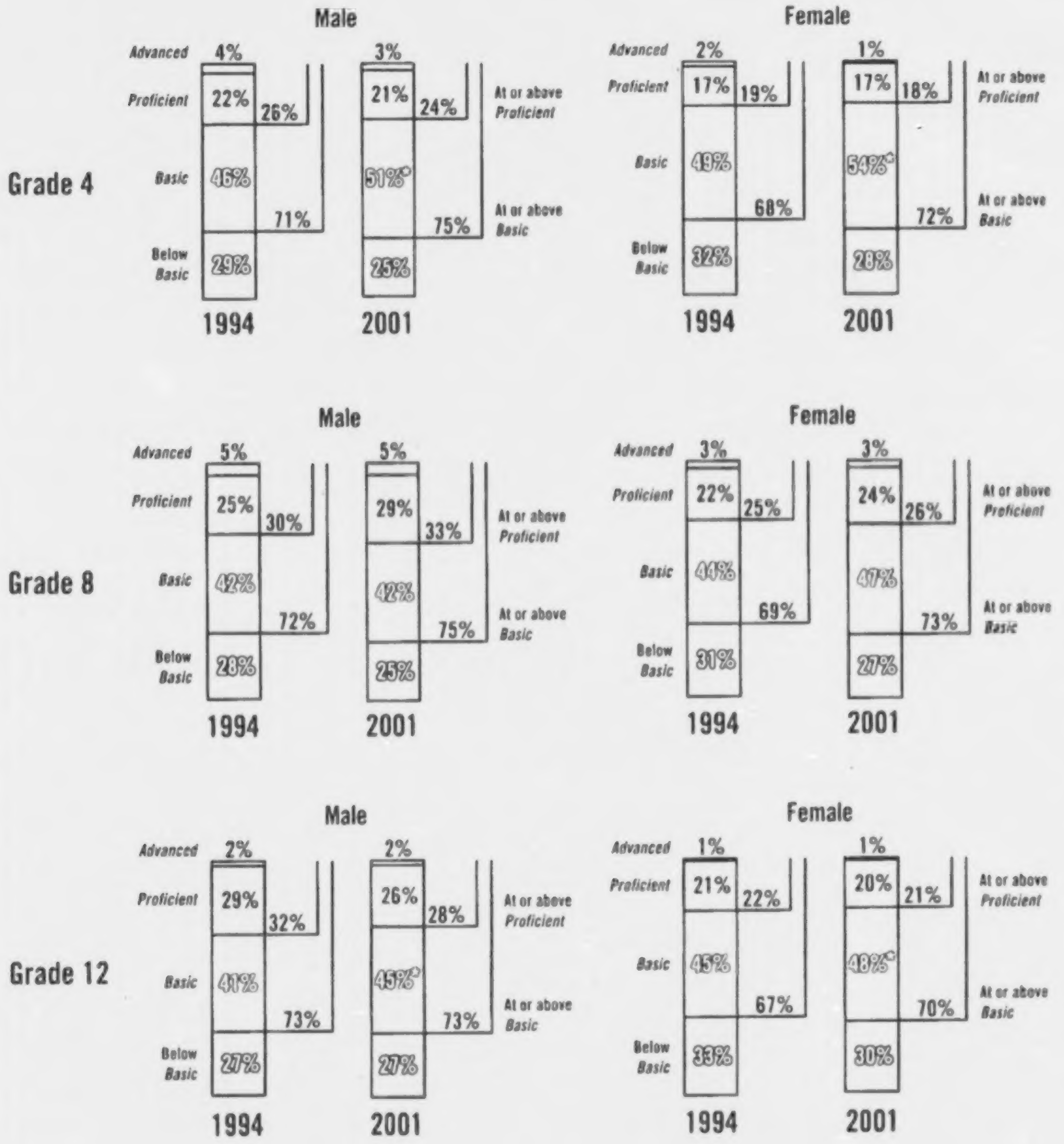
The percentages of male and female students at or above the geography achievement levels and within each achievement-level range are presented in figure 3.3. None of the apparent changes across years in the percentages of male and female students at or above *Basic* and at or above *Proficient* were statistically significant.

Looking at the differences in performance of male and female students in 2001 shows higher percentages of fourth- and eighth-grade male students at or above *Proficient* and at *Advanced* than their female counterparts. Among twelfth-graders, a higher percentage of male students than female students were at or above the *Basic* and *Proficient* levels.

Figure 3.3

National Achievement-Level Results by Gender

Percentage of students within and at or above geography achievement levels by gender, grades 4, 8, and 12: 1994 and 2001



★ Significantly different from 1994.

NOTE: Percentages within each geography achievement-level range may not add to 100, or to the exact percentages at or above achievement levels, due to rounding.

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and 2001 Geography Assessments.

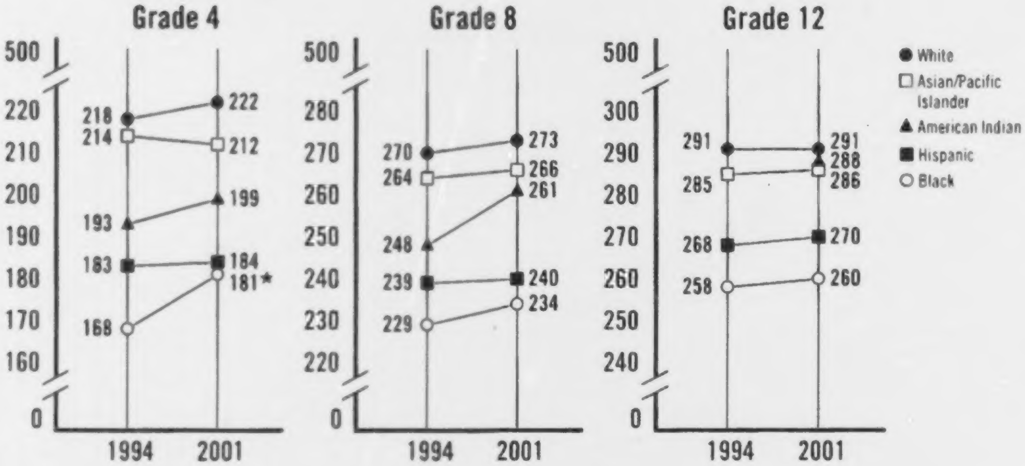
Race/Ethnicity

The background questionnaire administered with the NAEP geography assessment asked students to indicate the racial/ethnic subgroup that best described them. The mutually exclusive subgroup categories were White, Black, Hispanic, Asian/Pacific Islander, and American Indian (including Alaska Native). Figure 3.4 shows the average scores for the five subgroups at grades 4, 8, and 12. Only the results from the 2001 assessment are reported for twelfth-grade American Indian students because the sample size in 1994 was insufficient to permit a reliable estimate. At grade 4, the average score of Black students increased from 168 in 1994 to 181 in 2001. There were no other statistically significant changes in average scores among the five racial/ethnic groups. The significance of the apparent gains for American Indian students at grades 4 and 8 could not be determined because of insufficient sample sizes.

Figure 3.4

National Scale Score Results by Race/Ethnicity

Average geography scale scores by race/ethnicity, grades 4, 8, and 12: 1994 and 2001



★ Significantly different from 1994.

NOTE: Sample size was insufficient to permit a reliable estimate for American Indian students at grade 12 in 1994.

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and 2001 Geography Assessments.

Scale score differences among subgroups were evident at all three grades in 2001. At fourth grade, White students had higher scores, on average, than students from the other four racial/ethnic groups. Asian/Pacific Islander students outperformed Black, Hispanic, and American Indian students, and American Indian students performed better than Black and Hispanic students.

At grade 8, White students had higher average scores than Black, Hispanic, and Asian/Pacific Islander students. Asian/Pacific Islander and American Indian students outperformed Black and Hispanic students. Hispanic students had higher average scores than Black students.

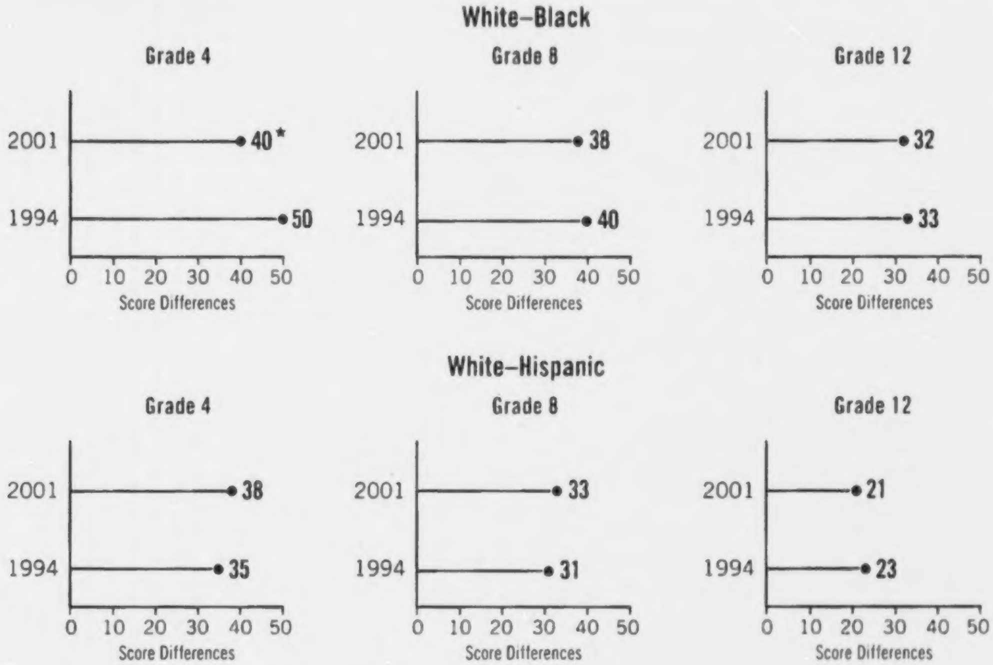
Among twelfth-graders, White students, Asian/Pacific Islander students, and American Indian students had higher average scores than Black students and Hispanic students, and Hispanic students outperformed Black students. These differences should, however, be interpreted with caution. The average score of a selected subgroup does not represent the entire range of performance within that group. Furthermore, differences between groups of students cannot be attributed solely to group identification. A complex array of educational and social factors interacts to affect average student performance.

Score differences between White students and Black students and between White students and Hispanic students are presented in figure 3.5. Results from the 2001 geography assessment show a narrowing of the score difference between White students and Black students at grade 4. Other apparent changes were not statistically significant.

Figure 3.5

National Scale Score Differences by Race/Ethnicity

Differences in average geography scale scores by race/ethnicity, grades 4, 8, and 12: 1994 and 2001



* Significantly different from 1994.
NOTE: Score differences are calculated based on differences between unrounded average scale scores.
SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and 2001 Geography Assessments.

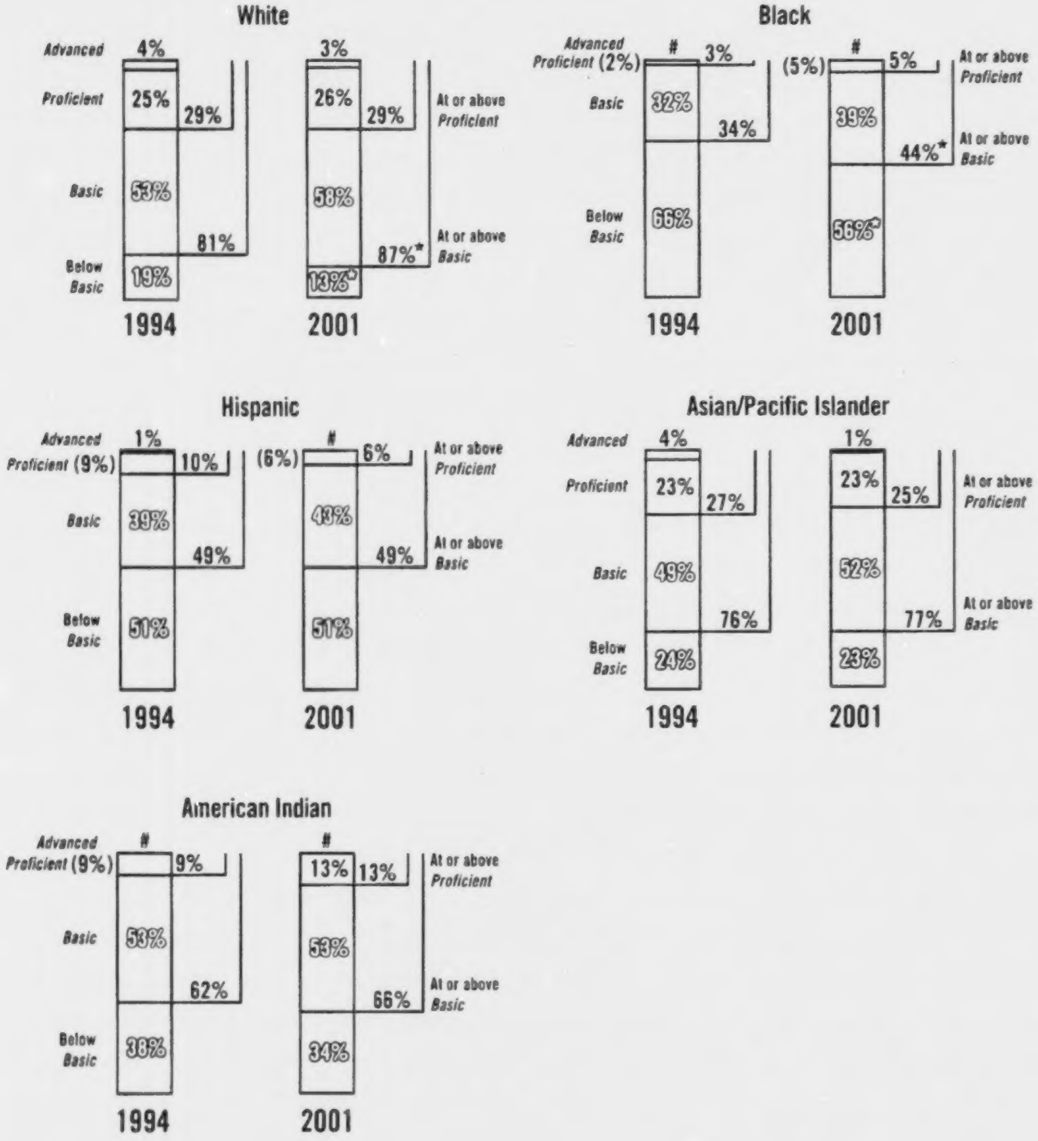
Achievement-level results for the racial/ethnic subgroups are presented in figures 3.6a, b, and c. At grade 4, the percentages of Black students and White students performing at or above the *Basic* level were higher in 2001 than in 1994. At grade 8, the percentage of White students at or above *Basic* was higher in 2001. There was no statistically significant change in the percentage of twelfth-grade students at or above the *Basic* and *Proficient* levels among any of the racial/ethnic groups.

Comparing the performance of subgroups in 2001 shows higher percentages of White and Asian/Pacific Islander students at or above the *Basic* and *Proficient* levels than Black and Hispanic students at all three grades.

Figure 3.6a

National Achievement-Level Results by Race/Ethnicity

Percentage of students within and at or above geography achievement levels by race/ethnicity, grade 4: 1994 and 2001



* Significantly different from 1994.

# Percentage is between 0.0 and 0.5.

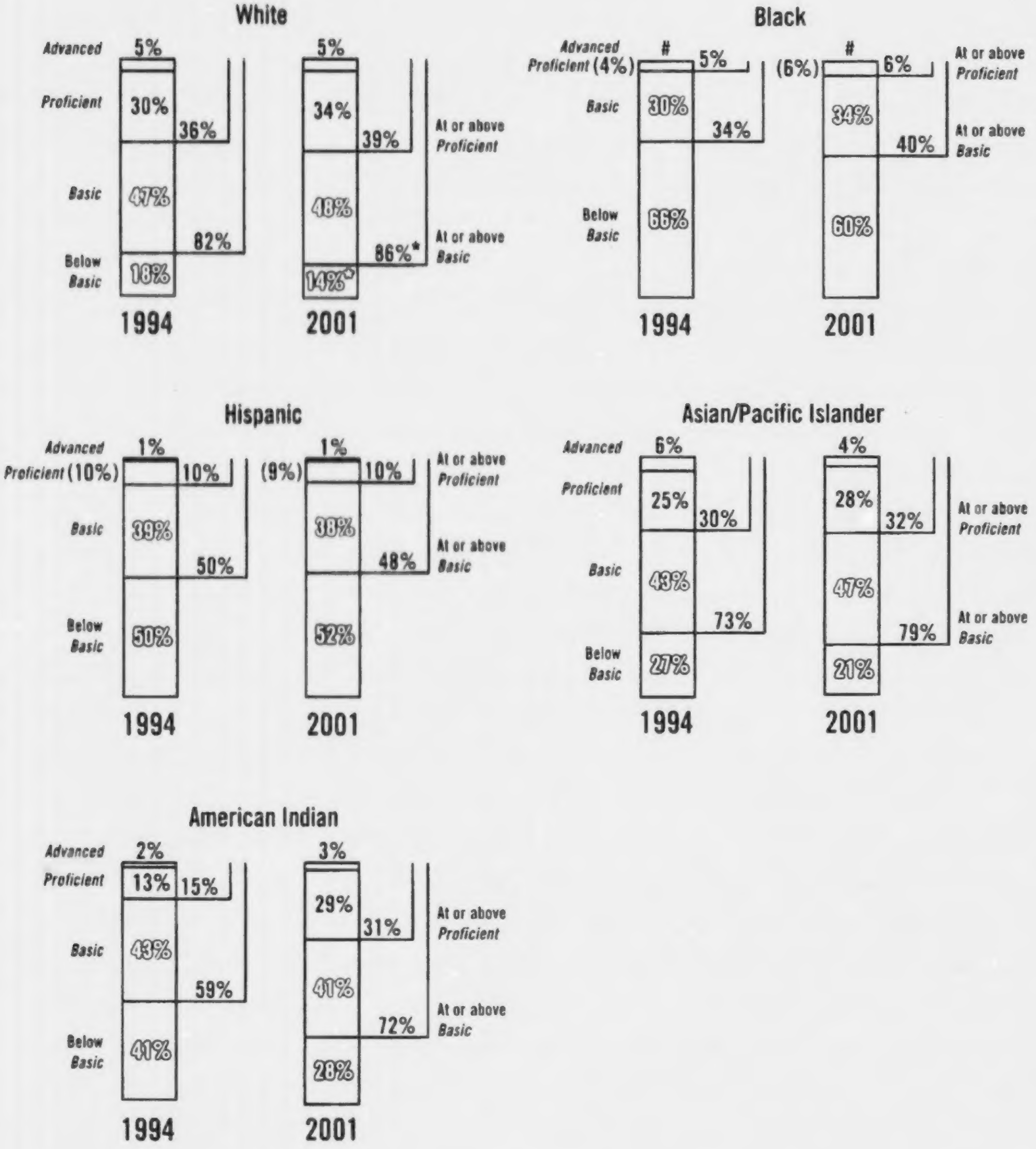
NOTE: Percentages within each geography achievement-level range may not add to 100, or to the exact percentages at or above achievement levels, due to rounding.

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and 2001 Geography Assessments.

Figure 3.6b

National Achievement Level Results by Race/Ethnicity

Percentage of students within and at or above geography achievement levels by race/ethnicity, grade 8: 1994 and 2001



* Significantly different from 1994.

# Percentage is between 0.0 and 0.5.

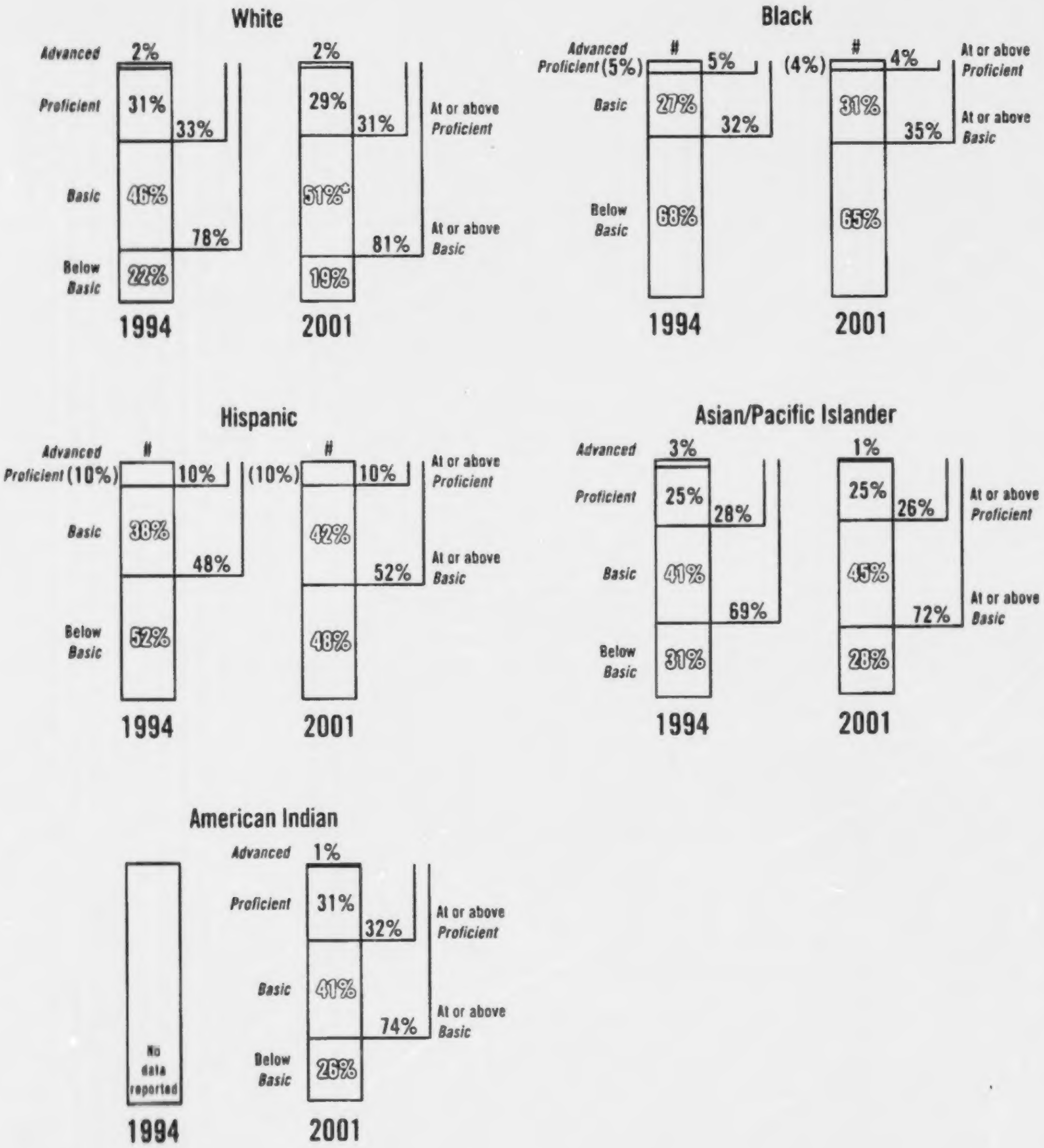
NOTE: Percentages within each geography achievement-level range may not add to 100, or to the exact percentages at or above achievement levels, due to rounding.

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and 2001 Geography Assessments.

Figure 3.6c

National Achievement-Level Results by Race/Ethnicity

Percentage of students within and at or above geography achievement levels by race/ethnicity, grade 12: 1994 and 2001



* Significantly different from 1994.

# Percentage is between 0.0 and 0.5.

‡ Sample size was insufficient to permit a reliable estimate for American Indian students at grade 12 in 1994.

NOTE: Percentages within each geography achievement-level range may not add to 100, or to the exact percentages at or above achievement levels, due to rounding.

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and 2001 Geography Assessments.

Region of the Country

NAEP assessments traditionally provide results for four regions of the country: Northeast, Southeast, Central, and West. Appendix A (see page 137) contains a description of the states and other jurisdictions that make up each region.

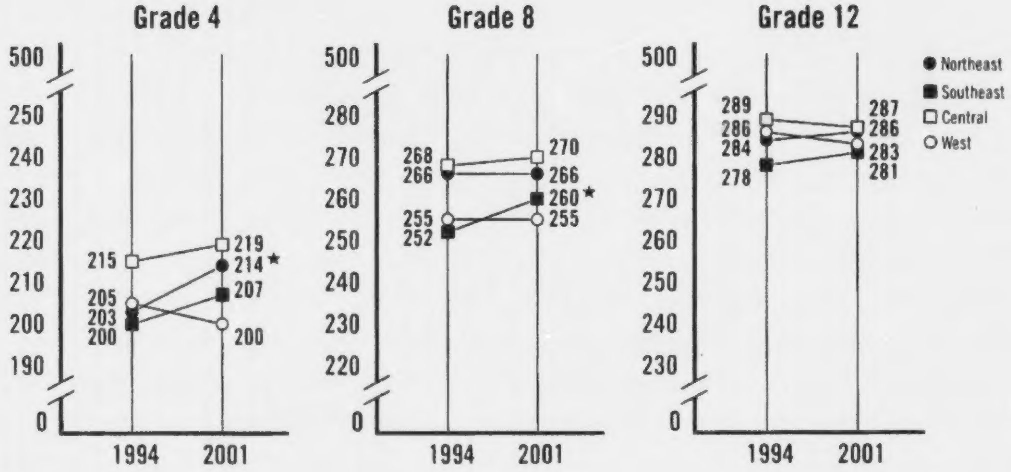
Figure 3.7 shows scale score results by region of the country. Overall increases in average scores at grades 4 and 8 were not spread evenly across the four regions of the country. At grade 4, students in the Northeast region showed a gain in the average score between 1994 and 2001. At grade 8, students in the Southeast region showed a statistically significant increase. None of the other apparent changes between 1994 and 2001 in regional average scores were statistically significant.

In 2001, some differences in performance among regions are evident at all three grades. At grades 4 and 8, students in the Northeast and Central regions had higher average scores than their counterparts in the West. Students in the Central region outperformed students in the Southeast. Twelfth-graders in the Central region had higher average scores than twelfth-graders in the Southeast region.

Figure 3.7

National Scale Score Results by Region of the Country

Average geography scale scores by region of the country, grades 4, 8, and 12: 1994 and 2001



★ Significantly different from 1994.

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and 2001 Geography Assessments.

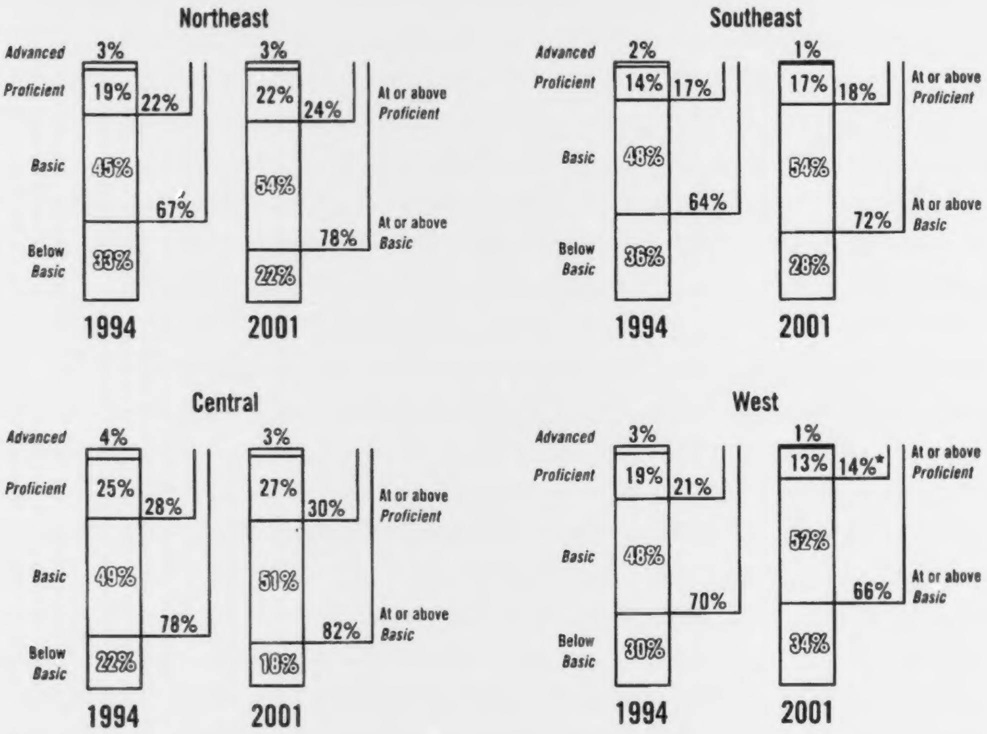
Achievement-level results for the four regions appear in figures 3.8a, b, and c. The percentage of fourth-grade students from the West performing at or above the *Proficient* level decreased between 1994 and 2001. Over the same period, the percentage of both eighth- and twelfth-graders in the Southeast performing at or above the *Basic* level increased.

Figures 3.8a, b, and c also show a number of differences in achievement-level performance among the four regions for the year 2001. At grades 4 and 8, there were higher percentages of students in the Northeast region and the Central region at or above *Basic* and at or above *Proficient* than in the West. At all three grades, the percentage of students at or above *Basic* and at or above *Proficient* was higher in the Central region than in the Southeast.

Figure 3.8a

National Achievement-Level Results by Region of the Country

Percentage of students within and at or above geography achievement levels by region of the country, grade 4: 1994 and 2001



★ Significantly different from 1994.

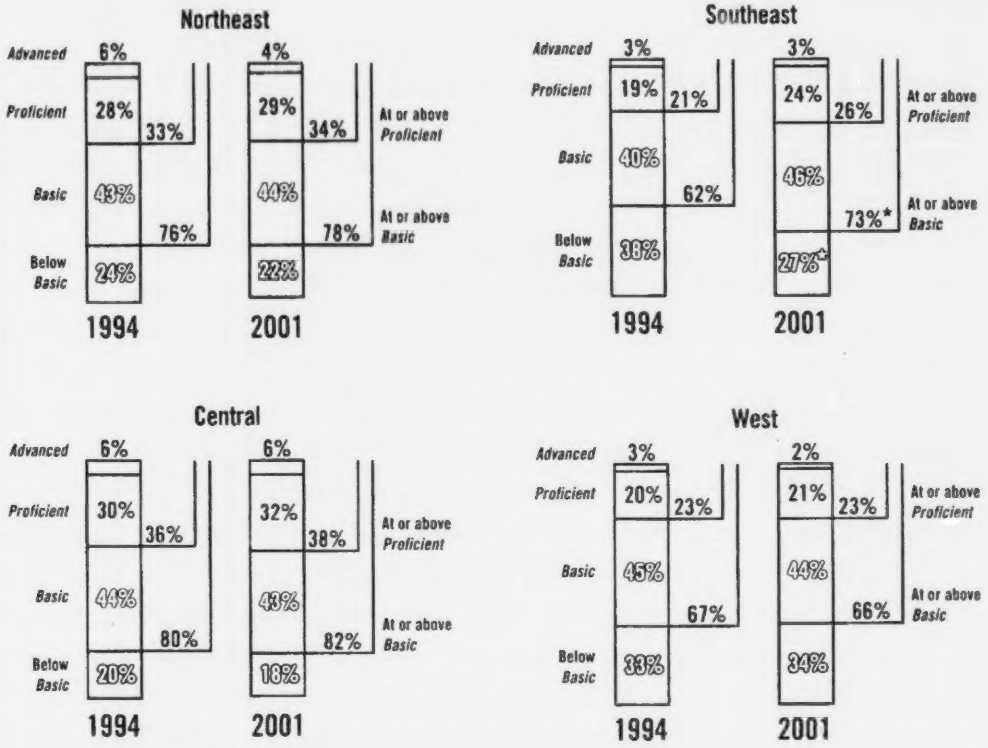
NOTE: Percentages within each geography achievement-level range may not add to 100, or to the exact percentages at or above achievement levels, due to rounding.

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and 2001 Geography Assessments.

Figure 3.8b

National Achievement-Level Results by Region of the Country

Percentage of students within and at or above geography achievement levels by region of the country, grade 8: 1994 and 2001



★ Significantly different from 1994.

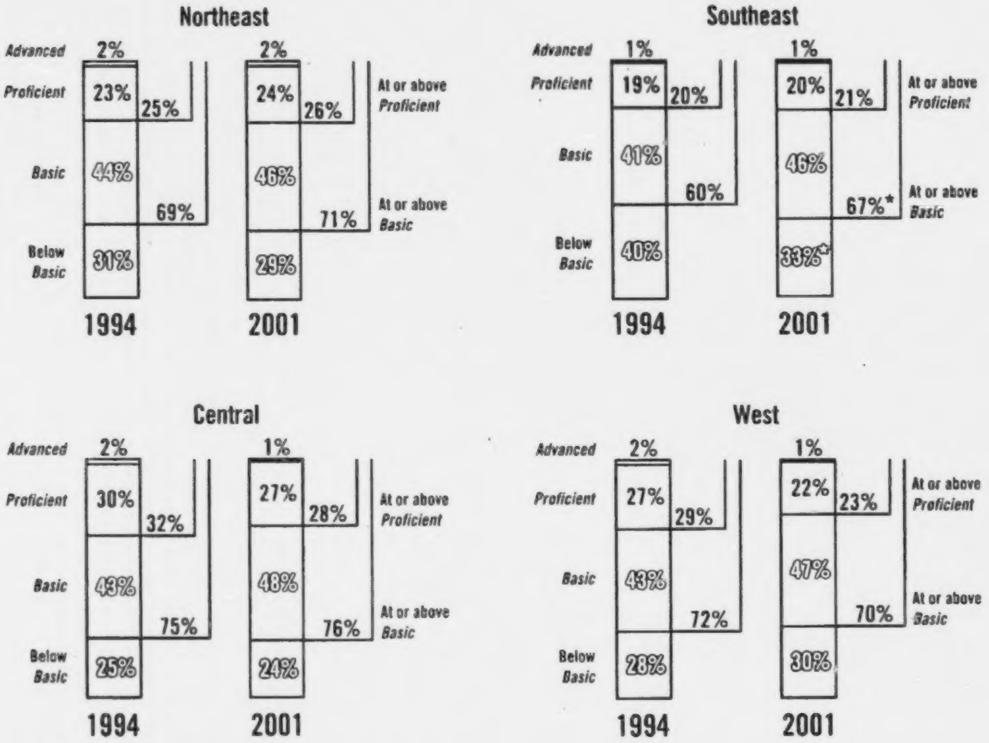
NOTE: Percentages within each geography achievement-level range may not add to 100, or to the exact percentages at or above achievement levels, due to rounding.

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and 2001 Geography Assessments.

Figure 3.8c

National Achievement-Level Results by Region of the Country

Percentage of students within and at or above geography achievement levels by region of the country, grade 12: 1994 and 2001



★ Significantly different from 1994.

NOTE: Percentages within each geography achievement-level range may not add to 100, or to the exact percentages at or above achievement levels, due to rounding.

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and 2001 Geography Assessments.

Parents' Highest Level of Education

Eighth- and twelfth-grade students who participated in the NAEP geography assessment were asked to indicate the highest level of education completed by each parent. Students chose from among four options: did not finish high school, graduated from high school, some education after high school, and graduated from college. Students could also choose the response, "I don't know." The analysis here uses the highest education level reported for either parent. Data were not collected at grade 4 because in previous NAEP assessments fourth-graders' responses about their parents' education were unreliable and contained a large percentage of "I don't know" responses.

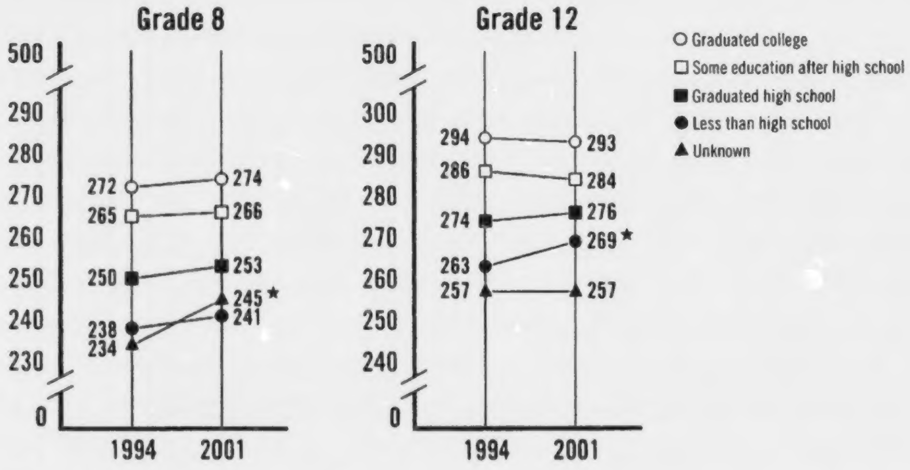
The scale score results for student-reported parent education level appear in figure 3.9. In 2001, nearly one-half of all students at both grades reported that at least one of their parents graduated from college (48 percent at grade 8 and 46 percent at grade 12). In the case of grade 8, that percentage is a statistically significant increase over 1994. Only a small percentage of students at either grade reported that their parents had not graduated from high school (6 percent at grade 8 and 7 percent at grade 12). Additional information on the percentage of students reporting parents' highest level of education is available in appendix B.

Twelfth-graders who reported that their parents had not graduated from high school had higher average scores in 2001 than in 1994. The results for both grades in 2001 reveal a pattern similar to that from the 1994 geography assessment and from other NAEP assessments. Overall there is a positive relationship between student-reported parental education and student achievement: the higher the parental education level reported, the higher the average score.

Figure 3.9

National Scale Score Results by Parents' Education

Average geography scale scores by parents' highest level of education, grades 8 and 12: 1994 and 2001



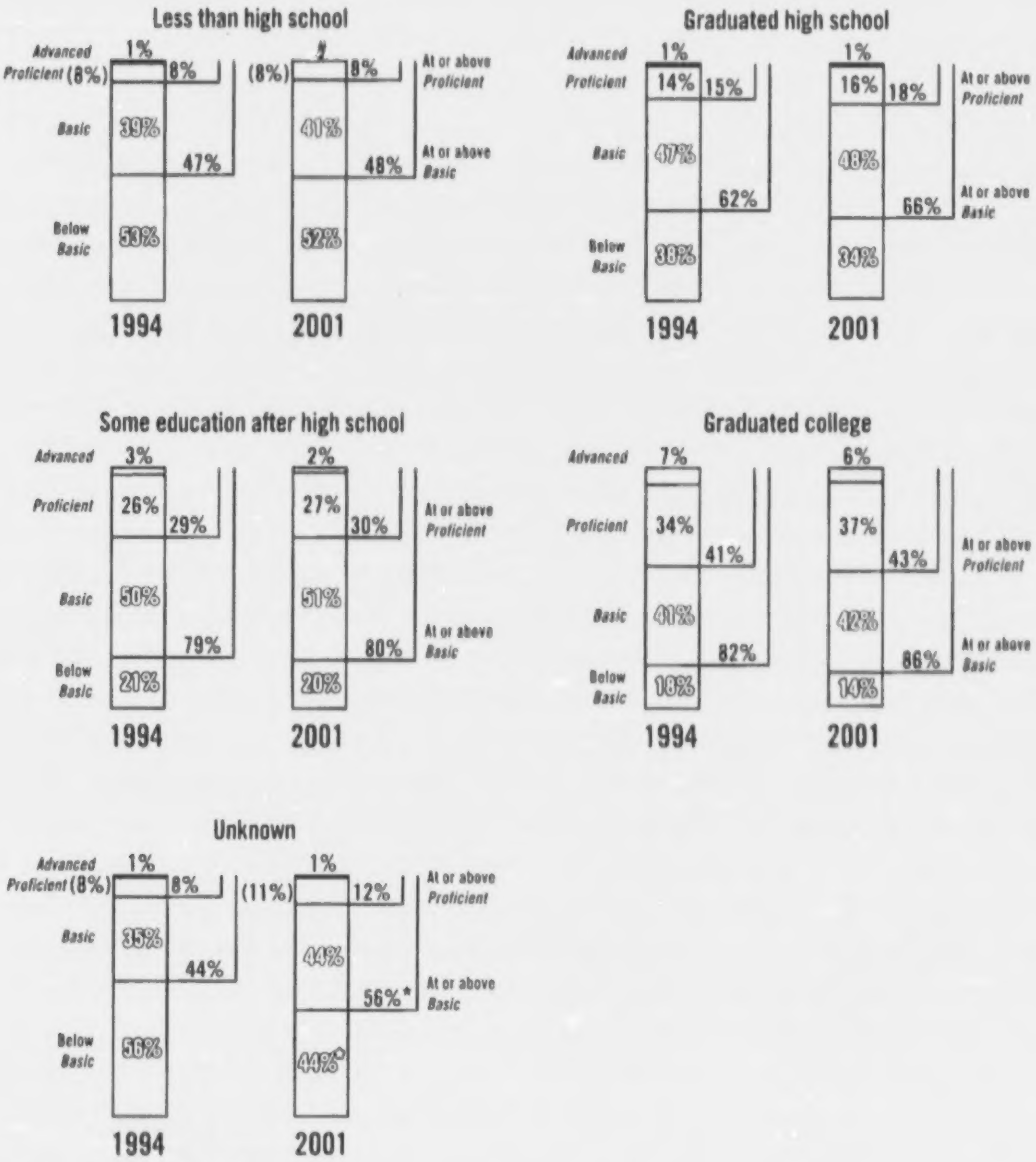
★ Significantly different from 1994.
SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and 2001 Geography Assessments.

Achievement-level results by level of parental education are presented in figures 3.10a and b. As with the average scale score results, the 2001 achievement-level results show a general pattern of higher percentages of eighth- and twelfth-grade students at or above the *Basic* and *Proficient* levels as the reported level of parental education level increased. The one exception to the pattern was at grade 12, where the percentage of students at or above *Proficient* did not differ significantly between those students who reported that their parents graduated high school and those who reported their parents did not.

Figure 3.10a

National Achievement-Level Results by Parents' Education

Percentage of students within and at or above geography achievement levels by parents' highest level of education, grade 8: 1994 and 2001



* Significantly different from 1994.

# Percentage is between 0.0 and 0.5.

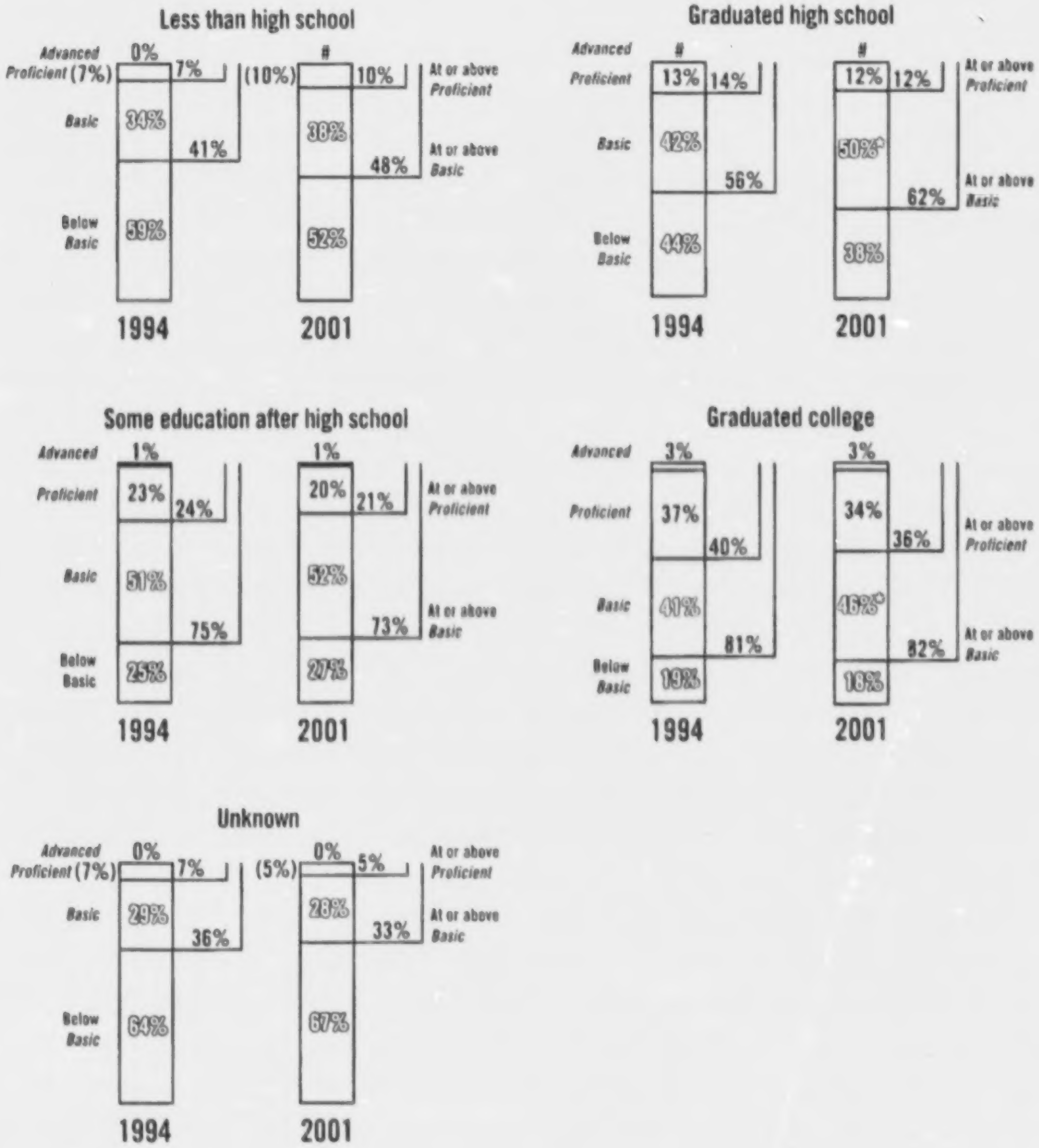
NOTE: Percentages within each geography achievement-level range may not add to 100, or to the exact percentages at or above achievement levels, due to rounding.

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and 2001 Geography Assessments.

Figure 3.10b

National Achievement-Level Results by Parents' Education

Percentage of students within and at or above geography achievement levels by parents' highest level of education, grade 12: 1994 and 2001



* Significantly different from 1994.

# Percentage is between 0.0 and 0.5.

NOTE: Percentages within each geography achievement-level range may not add to 100, or to the exact percentages at or above achievement levels, due to rounding.

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and 2001 Geography Assessments.

Type of School

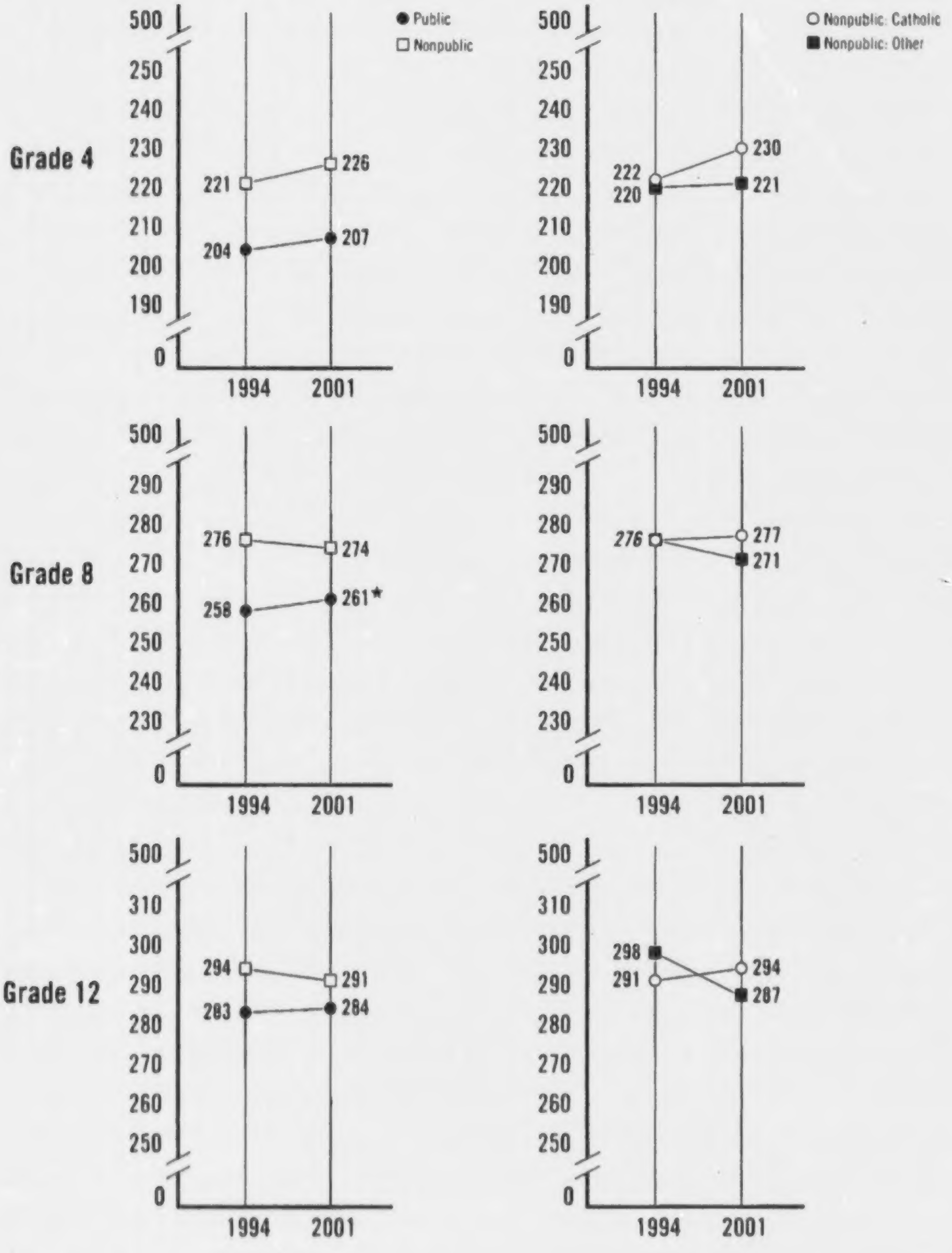
The schools that participate in the NAEP assessment are classified as either public or nonpublic. A further distinction is then made within the nonpublic classification between nonpublic Catholic schools and other nonpublic schools. In 2001, as in previous NAEP assessments, fourth-, eighth-, and twelfth-grade students attending nonpublic schools had higher average scores than did their public school peers. However, readers are cautioned against making assumptions about the relative quality of public- and nonpublic-school instruction based on these findings. Socioeconomic and sociological factors that may affect student performance should also be considered when interpreting the results.

Figure 3.11 shows average geography scores by type of school. At grade 8, public school students had higher average scores in 2001 than in 1994. All other apparent differences across years were not statistically significant. The data for performance in 2001 reveal that, at all three grades, students from Catholic schools had higher average scores than students from public schools. The apparent differences between students in public schools and other nonpublic schools were not statistically different.

Figure 3.11

National Scale Score Results by Type of School

Average geography scale scores by type of school, grades 4, 8, and 12: 1994 and 2001



★ Significantly different from 1994.

NOTE: Italicized scale score values indicate that two or more groups had the same rounded average score. The average scores, when rounded, were the same for Nonpublic: Catholic and Nonpublic: Other at grade 8 in 1994.

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and 2001 Geography Assessments.

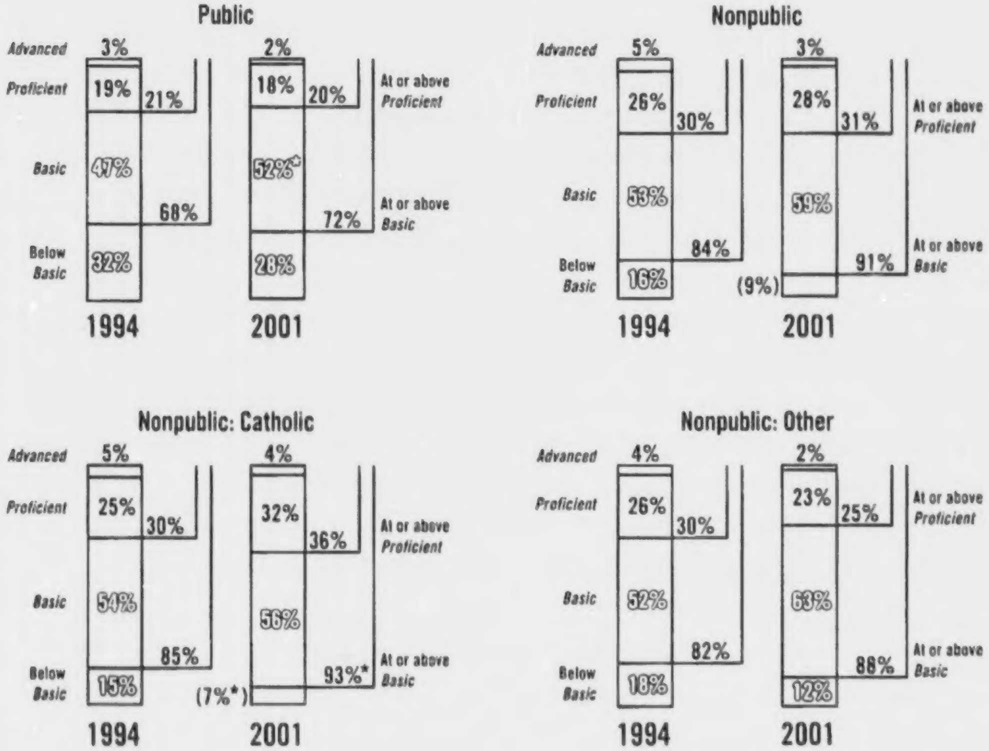
Achievement-level results by type of school are presented in figures 3.12a, b, and c. At grade 4, the percentage of Catholic school students performing at or above the *Basic* level increased between 1994 and 2001. At grade 8, the percentage of public school students at or above the *Basic* level increased across years.

In 2001 there were a number of differences in achievement-level performance between subgroups. At all three grades, there were higher percentages of nonpublic school students and, more specifically, Catholic school students at or above the *Basic* and *Proficient* levels than public school students.

Figure 3.12a

National Achievement-Level Results by Type of School

Percentage of students within and at or above geography achievement levels by type of school, grade 4: 1994 and 2001



★ Significantly different from 1994.

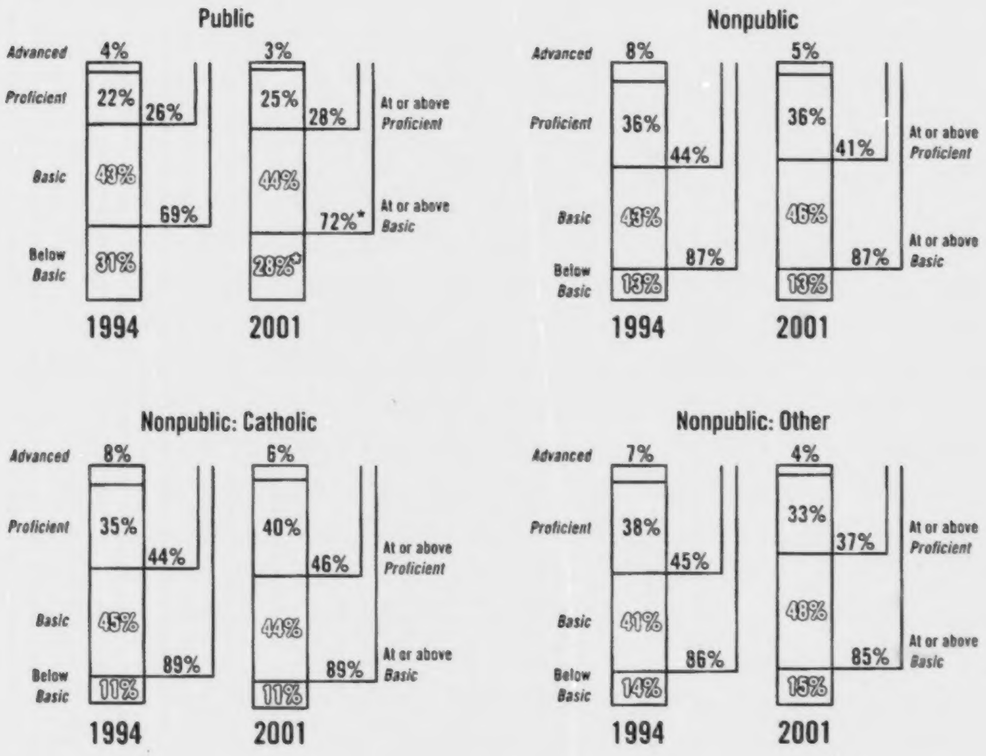
NOTE: Percentages within each geography achievement-level range may not add to 100, or to the exact percentages at or above achievement levels, due to rounding.

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and 2001 Geography Assessments.

Figure 3.12b

National Achievement-Level Results by Type of School

Percentage of students within and at or above geography achievement levels by type of school, grade 8: 1994 and 2001



* Significantly different from 1994.

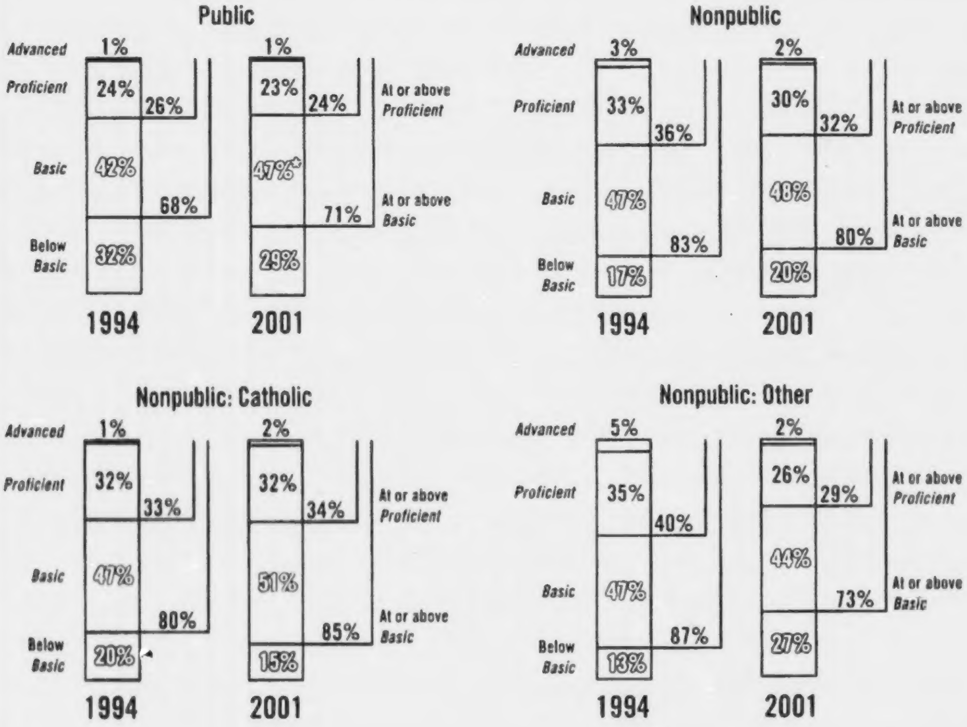
NOTE: Percentages within each geography achievement-level range may not add to 100, or to the exact percentages at or above achievement levels, due to rounding.

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and 2001 Geography Assessments.

Figure 3.12c

National Achievement-Level Results by Type of School

Percentage of students within and at or above geography achievement levels by type of school, grade 12: 1994 and 2001



* Significantly different from 1994.

NOTE: Percentages within each geography achievement-level range may not add to 100, or to the exact percentages at or above achievement levels, due to rounding.

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and 2001 Geography Assessments.

Type of Location

The schools from which NAEP draws its samples of students are classified according to their type of location. Based on Census Bureau definitions of metropolitan statistical areas, including population size and density, the three mutually exclusive categories are central city, rural/small town, and urban fringe/large town. Because of new methods used by NCES to identify the type of location assigned to each school in the Common Core of Data, schools were not classified in exactly the same way in 2001 as in 1994. Therefore, comparisons between the two assessment years are not possible, and only the data from the 2001 assessment are reported. More information on the definitions of the 2001 assessment classifications for location type appears in appendix A.

The performance of students by type of school location is shown in table 3.1. At all three grades, students attending schools in rural and urban fringe locations had higher average scale scores than students in central city schools.

Table 3.1 National Scale Score Results by Type of Location

Average geography scale scores by type of school location, grades 4, 8, and 12: 2001

	Central city	Urban fringe/large town	Rural/small town
Grade 4	199	212	215
Grade 8	255	265	265
Grade 12	279	288	284

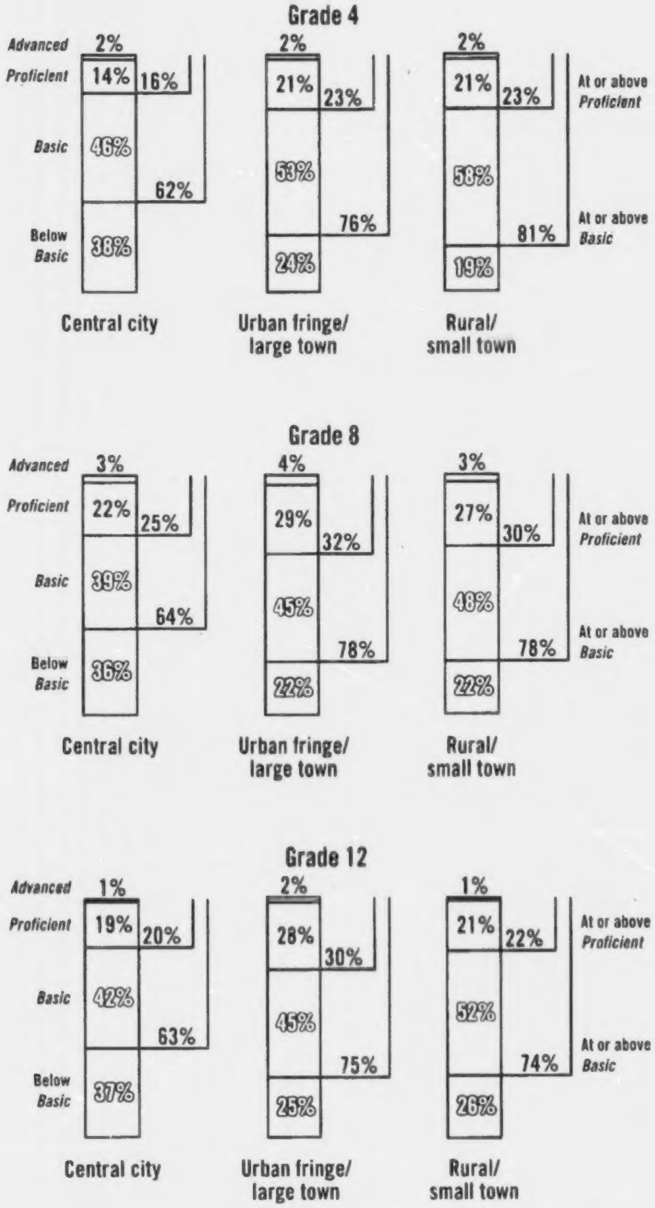
SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2001 Geography Assessment.

Achievement-level results by type of school location appear in figure 3.13. At grade 4, higher percentages of urban fringe and rural students performed at or above *Basic* and at or above *Proficient* than did their central city counterparts. There were higher percentages of eighth-graders from urban fringe and rural locations at or above *Basic* than those from central city locations. There were also higher percentages of students at or above *Proficient* in urban fringe locations than central city locations. At grade 12, higher percentages of urban fringe and rural students than central city students performed at or above the *Basic* level, and there were higher percentages of students at or above *Proficient* in urban fringe locations than in central city or rural locations.

Figure 3.13

National Achievement-Level Results by Type of Location

Percentage of students within and at or above geography achievement levels, by type of school location, grades 4, 8, and 12: 2001



NOTE: Percentages within each geography achievement-level range may not add to 100, or to the exact percentages at or above achievement levels, due to rounding.
SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2001 Geography Assessment.

Free/Reduced-Price School Lunch Program Eligibility

Funded by the U.S. Department of Agriculture (USDA) as part of the National School Lunch Program, the Free/Reduced-Price School Lunch program is designed to assure that children at or near the poverty line receive nourishing meals. Eligibility guidelines for the lunch program are based on the federal income poverty guidelines and are stated by household size.[1] NAEP first began collecting data on student eligibility for this program in 1996; therefore cross-year comparisons back to 1994 are not possible.

Table 3.2 presents the average scale score results for grades 4, 8, and 12. The scores for the substantial number of students for whom eligibility information is not available appear in the "Info not available" column (see the percentages for each category in the table B.18). Students whose schools do not participate in the Free/Reduced-Price School Lunch program are included in this category. At each grade, students eligible for the Free/Reduced-Price School Lunch program (i.e., those meeting the poverty guidelines) had lower average scores than did ineligible students and students for whom information was not available.

Table 3.2 National Scale Score Results by Free/Reduced-Price School Lunch Eligibility

Average geography scale scores by student eligibility for Free/Reduced-Price School Lunch program, grades 4, 8, and 12: 2001

	Eligible	Not eligible	Info not available
Grade 4	186	221	218
Grade 8	242	270	266
Grade 12	269	287	289

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2001 Geography Assessment.

Achievement-level results reflected the scale score results, as seen in figure 3.14. At all three grades, higher percentages of students who were ineligible for the Free/Reduced-Price School Lunch program or for whom information was not available were at or above *Basic* and at or above *Proficient* than were students who were eligible for the lunch program. At grade 8, this pattern extended to the *Advanced* achievement level.

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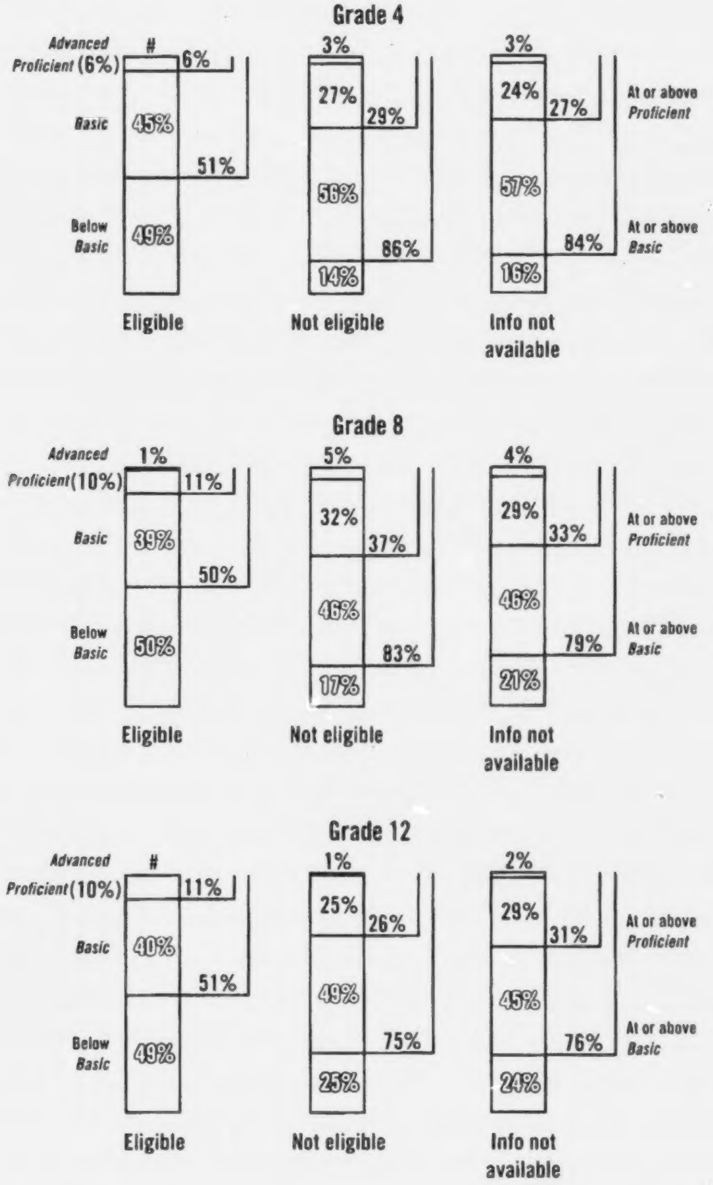
[1] U.S. General Services Administration. (2001). *Catalog of federal domestic assistance*. Washington, DC: Executive Office of the President, Office of Management and Budget. http://www.cfda.gov/default.htm.

Figure 3.14
National Achievement-Level Results by Free/Reduced-Price School Lunch Program Eligibility

Percentage of students within and at or above geography achievement levels by Free/Reduced-Price School Lunch program eligibility, grades 4, 8, and 12: 2001



# Percentage is between 0.0 and 0.5.

NOTE: Percentages within each geography achievement-level range may not add to 100, or to the exact percentages at or above achievement levels, due to rounding.

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2001 Geography Assessment.

4

Classroom Contexts for Learning

This chapter examines teacher and student variables related to the teaching and learning of geography, such as teacher preparedness and classroom practices, student interest in geography, and the context in which students learn the concepts of geography. The results presented in this chapter are based on teachers' and students' responses to questionnaires administered as part of the NAEP 2001 geography assessment. NAEP administers background and instructional questionnaires to students at grades 4, 8, and 12 and to the teachers of participating fourth- and eighth-grade students. Teachers at grade 12 were not administered a questionnaire because of the difficulty of linking students to teachers across the diversity of courses at this grade level. In this examination of contexts for learning, students are the unit of analysis. Thus, for questions answered by students, the percentage of students choosing each response option is presented. For questions answered by teachers, the percentage of students whose teachers chose each option is presented. Students' average NAEP geography scores for each response are also presented in order to examine the relationship between each variable and students' geography performance. Readers are reminded that the relationship between a contextual variable and geography performance is not necessarily causal. Many factors contribute to student performance. NAEP data can identify relationships between contextual variables and student performance, but cannot explain why the relationships exist.

Chapter Focus

How does teacher preparedness relate to students' geography performance?

How do classroom activities and computer use relate to student achievement?

Chapter Contents

Teacher Background and Preparedness

Geography Skills Taught

Extent of Geography Instruction

Computer Use

Student Interest in Geography

Teacher Background and Preparedness to Teach Geography

Competency in geography is positively associated with extent of geography education and begins with well-prepared teachers.[1] Teachers of geography in grades 4, 8, and 12 approach instruction with varied backgrounds in geography or social studies, which necessarily results in diverse learning experiences for their students. Research on teaching and learning shows that the extent of a teacher's knowledge of a subject can have a marked effect on the quality of teaching or even the willingness to teach that subject.[2] A number of educators are concerned that poorly trained geography teachers—those teaching "out of field"—may lack the knowledge or skills to provide students with the knowledge necessary to meet geography standards.[3] Thus, it is instructive to explore the educational backgrounds of the teachers who are currently teaching geography to the nation's fourth- and eighth-grade students.

As part of the NAEP 2001 assessment, teachers of participating students in grades 4 and 8 were asked about their undergraduate and graduate majors and minors. The NAEP teacher questionnaire gave fourth- and eighth-grade teachers a number of different majors/minors from which to choose. Table 4.1 shows results for five majors/minors asked of elementary teachers and four majors/minors asked of eighth-grade teachers. Both the fourth- and eighth-grade teachers were asked if they had a major or minor in geography or geography education, history or history education, general social science or social studies education, or other social science (for example, political science, economics, sociology, psychology, anthropology). Fourth-grade teachers were also asked whether they had a major or minor in elementary education. Although teachers were asked separately about their undergraduate and graduate education, and about whether they had majored or minored in each subject, the data are presented here in a simplified form. The first column in table 4.1 shows the percentages and average scores of students whose geography teachers either majored or minored or had a special emphasis in a subject at either the undergraduate or graduate level. The second column shows the corresponding data for students whose teachers did not indicate that major or minor. Note that the columns can sum to more than 100 percent because it is possible for college students to complete more than one major or minor.

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[1] Geography Education Standards Project. (1994). *Geography for life: national geography standards.* Washington, DC: National Geographic Research and Exploration.

[2] Gregg, M. (2001). River views of beginning pre-service teachers: content knowledge use. *Journal of Geography 100*, 61–68.

Brophy, J. (1991). Advances in research on teaching. (Vol. 2) *Teacher's knowledge of subject matter as it relates to their teaching practice.* Greenwich, CT: JAI Press.

Reynolds, M. C., Ed. (1989). *Knowledge base for the beginning teacher.* Oxford: Pergamon Press.

[3] Rynne, E. (1997) The continuing mismatch between student's undergraduate experience and the teaching demands of the geography classroom: experience of pre-service secondary geography teachers. *Journal of Geography in Higher Education 21*, 65–77.

At grade 4, nearly all students (93 percent) had teachers who majored or minored in elementary education in undergraduate or graduate school. While 15 to 20 percent of students were taught by teachers who had a social studies or history major or minor, only 7 percent of fourth-graders were taught by teachers who had majored or minored in geography. Average geography scores for fourth-grade students taught by teachers with an elementary education major or minor were higher than those taught by teachers who did not.

At grade 8, just over one-quarter (28 percent) of students were taught by teachers with a graduate or undergraduate major or minor in geography. Within this grade, there was no statistically significant relationship between teachers' major/minor and their students' NAEP geography scores.

Table 4.1

Percentage of students and average geography scale scores by teachers' reported undergraduate/graduate major and minor/special emphasis, grades 4 and 8: 2001

Grades 4&8

Teachers' Majors/Minors

Did you have a major, minor, or special emphasis in any of the following subjects as part of your ***undergraduate*** *or* ***graduate*** *course work?*	Yes	No
Grade 4		
Geography or geography education	7 204	93 210
History or history education	15 206	85 211
Social science or social studies education	20 208	80 210
Other social science	57 210	43 209
Elementary education	93 211	7 197
Grade 8		
Geography or geography education	28 263	72 263
History or history education	71 263	29 261
Social science or social studies education	55 263	45 262
Other social science	51 261	49 264

At grade 4, students whose teachers majored in elementary education had higher average scores than those whose teachers did not.

The percentage of students is listed first with the corresponding average scale score presented below.

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2001 Geography Assessment.

Teachers of fourth- and eighth-grade students participating in the geography assessment were asked how prepared they felt they were to teach geography. The question was asked in both 1994 and 2001, so cross-year comparisons are possible. Table 4.2 shows that a higher percentage of the fourth-grade students in 2001 had teachers who reported they were very prepared to teach geography (31 percent) than did students in 1994 (23 percent). These results may be associated with the increase in workshops in geography offered to teachers through various geographic organizations, and an increase in the literature available to teachers related to teaching geographic concepts.[4] In addition, there has been a call for geographers as a group, specifically college and university faculty, to develop an open dialogue with K-12 teachers that would aid in providing elementary and high school teachers with the teaching tools necessary for them to enter the classroom with some degree of confidence.[5]

In 2001, approximately 84 percent of fourth-grade students were taught by teachers who reported that they were very prepared or adequately prepared to teach geography. Only 1 percent of fourth-grade students had teachers who reported they were unprepared to teach geography. Approximately 87 percent of eighth-grade students had teachers who reported they were at least adequately prepared to teach geography, and only 2 percent had teachers who felt unprepared. The level of teachers' self-reported preparedness had no statistically significant relationship to students' average geography scores.

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[4] Gibbs, G. (1999). Improving teaching, learning, and assessment. *Journal of Geography in Higher Education 23*, 147–155.

McDougall, W. A. (2001). Why geography matters. *American Educator 25*,10–15.

McAlonan, S. Hotchkiss, H., Roark, K., Kenney, M., & Jackson, J. (2001) *Making standards work! Geography. A teacher's guide to contextual learning: integrating academic content standards with career development and workplace competencies*. Denver: Colorado State Department of Education.

[5] Bettis, N. C. (2001). Assessment issues in geographic education for the twenty-first century. *Journal of Geography 100*, 172–174.

Welford, M. & Fouberg, E.H. (2000). Theory and research in geography education. *Journal of Geography 99*, 183–184.

Teachers' Preparedness to Teach Geography

Table 4.2

Percentage of students and average geography scale scores by teachers' reports on how well prepared they felt they were to teach geography, grades 4 and 8: 1994 and 2001

Grades 4&8

Regardless or whether you are currently teaching the topic, how well prepared do you feel you are to teach geography at the elementary /middle school level?	1994	2001
Grade 4		
Very prepared	23	31 *
	209	211
Adequately prepared	57	53
	206	210
Somewhat prepared	18	15
	207	206
Unprepared	2	1
	200	209
Grade 8		
Very prepared	36	44
	260	263
Adequately prepared	48	43
	262	262
Somewhat prepared	13	11
	265	261
Unprepared	2	2
	260	264

The percentage of fourth-graders whose teachers reported they were very prepared to teach geography increased between 1994 and 2001.

The percentage of students is listed first with the corresponding average scale score presented below.

* Significantly different from 1994.

NOTE: Percentages may not add to 100 due to rounding.

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and 2001 Geography Assessments.

Geography Skills and Topics Taught in Grade 4

Many of the instructional guides and standards for geography education emphasize the importance of using maps and globes as tools to visualize space and gain a spatial perspective—necessary skills for an understanding of and competency in geography.[6] A number of articles also discuss the importance of exposing children to cultural geography, and environmental geography.[7,8] As part of the 1994 and 2001 NAEP geography assessments, fourth-grade teachers were asked about the frequency with which they taught about maps and globes, natural resources, foreign countries and cultures, and environmental issues as a part of geography instruction. The results are displayed in table 4.3.

There were a few changes between 1994 and 2001 in the frequency of instruction reported by teachers of fourth-grade students in these four skill and topic areas. The percentage of fourth-grade students whose teachers reported they never taught about natural resources increased from 9 percent in 1994 to 14 percent in 2001, while the percentage of students whose teachers reported teaching about natural resources as frequently as once or twice weekly decreased from 38 percent to 31 percent. These data may suggest that the topic of natural resources has lost favor during the past decade in teaching geography to fourth-graders.

Of the four skills and topics, maps and globes were most frequently used during geography instruction during 2001. Approximately three-quarters of fourth-grade students received instruction about maps and globes on at least a weekly basis, according to their teachers. However, less than one-half of the students had teachers who included natural resources as part of instruction once a week or more, and only about one-quarter received instruction in foreign countries and cultures and environmental issues at least once a week. Twenty-nine percent of students received no instruction in foreign countries and cultures. Readers should be aware that teachers were asked only to indicate the frequency and not the total amount of time they devoted to the skills and topics discussed here "as part of geography instruction." Therefore, students may have received more instruction in these four areas than is readily apparent from the percentages shown, though not necessarily from a geographic perspective.

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[6] Oldakowski, R. K. (2001). Activities to develop a spatial perspective among students in introductory geography courses. *Journal of Geography 100*, 243–250.

Thompson, G. (1999). I thought the world was flat, like the maps showed it! *Social Education 63*, 269–271.

Trifonoff, K. M. (1998). Introducing thematic maps in the primary grades. *Social Studies and the Young Learner 11*, 17–22.

[7] Crampton, J. (1998). A regional geography class in a distributed learning environment. *Journal of Higher Education 22*, 417–423.

[8] Graf, M. (2000). *The world's best places: classroom explorations in geography & environmental science.* Portsmouth, NH: Heinemann.

Steinberg, P. E. (1997). Political geography and the environment. *Journal of Geography 96*, 113–118.

Table 4.3

Percentage of students and average geography scale scores by teachers' reports on frequency of instruction of selected skills and topics, grade 4: 1994 and 2001

Grade 4

Frequency of Instruction in Fourth-Grade Geography Skills and Topics

How often do you teach the following skills and topics as a part of geography instruction with this class?	1994	2001
Using maps and globes		
Almost every day	29 210	28 213
Once or twice a week	54 208	47 209
Once or twice a month	17 199	22 206
Never or hardly ever	1 ***	3 209
Natural resources		
Almost every day	9 201	9 217
Once or twice a week	38 209	31* 208
Once or twice a month	44 208	46 210
Never or hardly ever	9 198	14* 208
Foreign countries and cultures		
Almost every day	6 206	3 206
Once or twice a week	19 203	23 208
Once or twice a month	43 208	45 209
Never or hardly ever	32 209	29 212
Environmental issues		
Almost every day	4 201	7 212
Once or twice a week	27 206	21 205
Once or twice a month	56 208	56 211
Never or hardly ever	13 208	16 211

Natural resources topics were taught less frequently in 2001.

The percentage of students is listed first with the corresponding average scale score presented below.

* Significantly different from 1994.

*** Sample size is insufficient to permit a reliable estimate.

NOTE: Percentages may not add to 100 due to rounding.

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and 2001 Geography Assessments.

Geography Skills Taught in Grades 8 and 12

Eighth-and twelfth-grade students participating in the 1994 and 2001 geography assessments were asked about the frequency with which they studied the following skills and topics in school: using maps and globes, natural resources (for example, oil, forests, and water), countries and cultures, and environmental issues (for example, pollution and recycling). The results of these questions are shown in tables 4.4a and 4.4b.

At grade 8, students in 2001 reported having devoted more time to two of the four areas than did their counterparts in 1994. Approximately 46 percent of students reported using maps and globes at least once or twice a week compared to 39 percent in 1994. At the same time, the percentage that reported never using maps and globes dropped from 28 percent to 21 percent. For the topic of countries and cultures, approximately 63 percent of students in 2001 said they studied it one or two times per week or more compared to 52 percent in 1994, and the percentage that reported never studying it fell from 20 to 13 percent.

The geography performance of eighth-graders varied somewhat depending on the amount of time they spent studying each topic, but in general, higher frequency of study did not translate into significantly higher performance. In the case of maps and globes and natural resources, students performed best when they studied the topics once or twice a month. Students who studied natural resources and environmental issues almost every day had lower average scores than students who studied these topics less frequently or never. Students who never studied countries and cultures had lower average scores than students who did study that topic.

Twelfth-graders' reports indicated a general increase between 1994 and 2001 in the amount of time they spent studying the four geography skills and topics listed in the beginning of this section. The easiest way to see this change among the data in table 4.4b is to note that the percentage of students responding "never" declined for each of the four topics (from 40 percent to 36 percent for maps and globes, from 45 percent to 39 percent for natural resources, from 28 percent to 19 percent for countries and cultures, and from 37 percent to 30 percent for environmental issues, respectively). But as these results also show, a substantial percentage of twelfth-graders still did not study these topics in 2001.

Again, as was seen at the eighth-grade level, more instruction was not necessarily linked to better student performance. Students who reported studying maps and globes and natural resources almost every day had lower average scores than students who reported less frequent study. The same was true with the study of environmental issues except that the performance of students in the "almost every day" and "never" categories did not differ significantly. The one instructional topic that did have a somewhat positive relationship to twelfth-graders' geography scores was countries and cultures. Students studying countries and cultures at least once a month outperformed those who never studied countries and cultures.

Frequency of Instruction in Eighth-Grade Geography Skills and Topics

Grade 8

Table 4.4a

Percentage of students and average geography scale scores by students' reports on frequency of instruction of selected skills and topics, grade 8: 1994 and 2001

How often have you studied the following geography skills and topics in school?	1994	2001
Using maps and globes		
Almost every day	9 261	12 * 259
Once or twice a week	30 264	34 * 264
Once or twice a month	33 263	33 268
Never or hardly ever	28 253	21 * 258
Natural resources		
Almost every day	9 251	9 249
Once or twice a week	21 259	24 * 262
Once or twice a month	36 265	35 269
Never or hardly ever	34 260	32 263
Countries and cultures		
Almost every day	23 260	31 * 264
Once or twice a week	29 261	32 * 266
Once or twice a month	28 264	24 * 263
Never or hardly ever	20 256	13 * 254
Environmental issues		
Almost every day	12 258	11 254
Once or twice a week	21 260	24 * 265
Once or twice a month	33 263	33 267
Never or hardly ever	34 260	32 262

Students performed best when instruction on these topics was once or twice a month.

Eighth-graders who never studied countries and cultures had lower scores than those who did.

The percentage of students is listed first with the corresponding average scale score presented below.

* Significantly different from 1994.

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and 2001 Geography Assessments.

Table 4.4b

Percentage of students and average geography scale scores by students' reports on frequency of instruction of selected skills and topics, grade 12: 1994 and 2001

Grade 12

How often have you studied the following geography skills and topics in school?	1994	2001
Using maps and globes		
Almost every day	7 284	6 277
Once or twice a week	22 288	24 285
Once or twice a month	31 286	34 * 287
Never or hardly ever	40 283	36 * 284
Natural resources		
Almost every day	7 282	7 275
Once or twice a week	18 286	22 * 283
Once or twice a month	31 288	32 288
Never or hardly ever	45 284	39 * 285
Countries and cultures		
Almost every day	16 287	20 * 286
Once or twice a week	26 288	32 * 288
Once or twice a month	30 286	29 286
Never or hardly ever	28 280	19 * 277
Environmental issues		
Almost every day	11 284	11 279
Once or twice a week	22 288	26 * 286
Once or twice a month	30 288	33 * 289
Never or hardly ever	37 282	30 * 282

All topics received more frequent instruction in 2001.

Students who never studied countries and cultures scored lower than those who did.

The percentage of students is listed first with the corresponding average scale score presented below.

* Significantly different from 1994.

NOTE: Percentages may not add to 100 due to rounding.

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and 2001 Geography Assessments.

The Extent of Students' Social Studies and Geography Instruction

As part of the NAEP 2001 geography assessment, eighth- and twelfth-grade students were asked a series of questions concerning the amount of geography instruction they had received. The results for the student responses are shown in tables 4.5 and 4.6 and are summarized below.

Geography Course Taking at Grades 8 and 12

Eighth-grade students were asked whether they had previously taken a geography course in grades 6 and 7, and whether they were currently enrolled in a geography course in eighth grade. The results of their answers to these questions are presented in cumulative form in table 4.5. This table shows the percentages and average scores of eighth-grade students who reported taking zero, one, two, and three years of geography from the sixth through eighth grades. In total, about 59 percent of eighth-grade students in 2001 took two or three years of geography. In 2001, 63 percent of eighth-graders reported taking a geography course in eighth grade (data not shown). A higher percentage of students in 2001 than in 1994 reported taking three years of geography and, conversely, a lower percentage in 2001 than in 1994 reported taking no geography courses. In addition, there was a positive association in 2001 between more course-taking and higher geography scores. Students who took three years of course work had higher scores, on average, than those who took two years. Those students who took two years had higher scores than those who took one year.

Table 4.5

Percentage of students and average geography scale scores by students' reports on grades in which geography was taken since the 6th grade, grade 8: 1994 and 2001

Grade 8

Eighth-Grade Frequency of Geography Course Taking

Did you take or do you expect to take a geography course in 6th, 7th, or 8th grade?	1994	2001
Number of grades selected		
None	18 250	12 * 255
One	30 257	20 * 256
Two	14 269	16 263
Three	26 274	43 * 272
Don't know	13 243	9 * 246

More frequent course taking was associated with higher scores for eighth-graders.

The percentage of students is listed first with the corresponding average scale score presented below.

* Significantly different from 1994.

NOTE: Percentages may not add to 100 due to rounding.

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and 2001 Geography Assessments.

Twelfth-grade students were asked whether they had previously taken a geography course in grades 9, 10, 11, or were currently enrolled in a geography course. Table 4.6 displays percentages of twelfth-grade students and their average geography scores by their cumulative amount of high school geography course-taking. Twelfth-graders in 2001 were more likely to report having taken three and four courses than their counterparts in 1994. The majority of twelfth-grade students (73 percent) indicated they were not currently taking geography in twelfth grade (data not shown). While taking more years of geography was related to higher geography scores for the eighth-graders in table 4.5, this pattern did not hold for the twelfth-grade data in table 4.6. In fact, those who reported taking no geography courses in high school had higher average scores than those who had taken 2, 3, or 4 years, and were not significantly different from those who took one year of geography. About one-half of the twelfth-grade students (53 percent) took one year or less of geography in high school. This group may represent students who are following a different academic curriculum than the students who reported taking geography in multiple years.

Twelfth-Grade Frequency of Geography Course Taking

Grade 12

Table 4.6

Percentage of students and average geography scale scores by students' reports on grades in which geography was taken since 9th grade, grade 12: 1994 and 2001

Did you take or do you expect to take a geography course in 9th, 10th, 11th, or 12th grade?	1994	2001
Number of grades selected		
None	31 286	21 * 289
One	35 288	32 288
Two	16 286	15 285
Three	10 281	18 * 280
Four	5 277	10 * 281
Don't know	3 268	3 265

Students taking one year or less of geography had higher scores, on average, than students taking 3 or 4 years.

The percentage of students is listed first with the corresponding average scale score presented below.

* Significantly different from 1994.

NOTE: Percentages may not add to 100 due to rounding.

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and 2001 Geography Assessments.

The Use of Computers in the Social Studies Classroom in Grades 4 And 8

Computers can be used to enhance geography instruction. The role of information and communication technologies in the classroom is to effectively supplement, not replace, human contact in the teaching and learning process.[9] Some research has shown that there is a quantifiable improvement in student understanding of geographic concepts when computers are used to enhance the learning experience.[10] The use of computers in geography instruction can also be employed to increase critical thinking skills for oral and written presentations, as well as for specific topics in geography.[11] While most geography instruction takes place under the curriculum category of "social studies," such instruction also takes place in classes with geography titles. The 2001 NAEP geography assessment asked teachers of fourth- and eighth-grade students how frequently computers were used when working on social studies to locate and retrieve social studies information through the Internet, look up social studies information in CD-ROM reference works, use exploration or simulation software, and organize social studies information using spreadsheets or databases. Table 4.7 presents results corresponding with teachers' reports on the frequency of these activities.

According to their teachers, the majority of fourth-grade students used computers for the four tasks either to a small extent or not at all. At fourth grade, students occasionally retrieved information through the Internet and used CD-ROMs for reference, but only rarely used exploration/simulation software or spreadsheets and databases. Nearly two-thirds of fourth-graders used the Internet or CD-ROMs to at least a small extent while less than half used simulation software or spreadsheets/databases at least to a small extent. However, 34 percent and 37 percent of students, respectively, did not engage in these computer activities at all. Students who used the Internet and CD-ROMs to either a small or a moderate extent had higher average scores than students who did not use them at all, and students who used simulation software to a small extent outperformed students who did not use such software.

---

[9] Shepard, I. (1998). *Teaching and learning geography with information and communication technologies.* Cheltenham, UK: Cheltenham and Gloucester College of Higher Education

Crampton, J. W. (1999). Integrating the web and the geography curriculum: the Bosnian virtual fieldtrip. *Journal of Geography 98*, 155–168.

[10] Mosely, W. G. (2001). Computer assisted comprehension of distant worlds: understanding hunger dynamics in Africa. *Journal of Geography 100*, 32–45.

[11] Sharma, M. B. & Elbow, G. S. (2000). *Using internet primary sources to teach critical thinking skills in geography.* Westport, CT: Greenwood Professional Guides in School Librarianship.

Cross, J.A. (1997). Natural hazards and disaster information on the internet. *Journal of Geography 96*, 307–314.
Barta-Smith, N.A. & Hathaway, J.T. (2000). Making cyberspaces into cyberplaces. *Journey of Geography 99*, 253–265.

Table 4.7a

Percentage of students and average geography scale scores by teachers' reports on computer use for social studies instruction, grade 4: 2001

Grade 4

Fourth-Grade Computer Use

When students in this class work on social studies, to what extent do they use computers to do each of the following?	2001
Grade 4	
Use CD-ROM to look up reference works	
Not at all	37 205
Small extent	47 211
Moderate extent	14 216
Large extent	2 214
Retrieve information through the Internet	
Not at all	34 203
Small extent	45 212
Moderate extent	17 216
Large extent	4 211
Use exploration/simulation software	
Not at all	54 207
Small extent	37 213
Moderate extent	8 211
Large extent	1 ***
Organize information using spreadsheets/databases	
Not at all	89 209
Small extent	9 213
Moderate extent	1 213
Large extent	# ***

Fourth-graders who did not use these technologies had lower scores than those who used them to a small or moderate extent.

The percentage of students is listed first with the corresponding average scale score presented below.
*** Sample size is insufficient to permit a reliable estimate.
# Percentage is between 0.0 and 0.5.
NOTE: Percentages may not add to 100 due to rounding.
SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2001 Geography Assessment.

Table 4.7b

Percentage of students and average geography scale scores by teachers' reports on computer use for social studies instruction, grade 8: 2001

When students in this class work on social studies, to what extent do they use computers to do each of the following?	2001
Grade 8	
Use CD-ROM to look up reference works	
Not at all	31 258
Small extent	48 263
Moderate extent	17 266
Large extent	4 268
Retrieve information through the Internet	
Not at all	20 255
Small extent	47 261
Moderate extent	29 266
Large extent	4 273
Use exploration/simulation software	
Not at all	62 261
Small extent	32 265
Moderate extent	5 259
Large extent	1 257
Organize information using spreadsheets/databases	
Not at all	74 261
Small extent	22 266
Moderate extent	2 262
Large extent	1 249

Eighth-graders who did not use these technologies had lower scores than those who used them to a small or moderate extent.

The percentage of students is listed first with the corresponding average scale score presented below.

NOTE: Percentages may not add to 100 due to rounding.

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2001 Geography Assessment.

At the eighth-grade level, the pattern of frequency of use of the information technology tools was similar to that in grade 4: information retrieval through the Internet and use of CD-ROMs for reference occurred to a small or moderate extent for two-thirds to three-quarters of the students, while exploration/simulation software and spreadsheets/databases were rarely used. Twenty-nine percent of eighth-grade students used the Internet to a moderate extent for social studies and 47 percent used it to a small extent, according to their teachers. Forty-eight percent used CD-ROMs to a small extent, nearly one-third (32 percent) used simulation software to a small extent, and 22 percent used spreadsheets or databases to a small extent. About three-quarters of students in eighth grade (74 percent) did not use spreadsheets or databases at all.

Greater usage of the Internet and CD-ROMs was generally associated with higher performance among eighth-graders. Students whose teachers reported a large extent of Internet usage had higher average scores than students who used the Internet to a small extent or not at all. Students who used the Internet or CD-ROMs to a moderate or small extent had higher scores than students who did not use these tools at all.

The Use of Computers in Grade 12

Twelfth-grade students participating in the 2001 NAEP geography assessment also answered questions on the extent of use of several types of computer technology. In answering the questions, students were to consider both work in class and homework assignments. The results are shown in table 4.8.

Forty-two percent of students used a CD or the Internet for research to at least a moderate extent. About one-third of students (32 percent) used these tools to a small extent, and 26 percent did not use them at all. Students who reported using a CD or the Internet for research to a small or moderate extent had higher average scores than those who never used them, and moderate use was associated with higher scores than a small amount of use. There was no statistically significant difference between the average scores of students using CDs and the Internet to a moderate extent and those of students using them to a large extent.

Thirty-four percent of twelfth-grade students reported some use of simulation software. Twenty-three percent used it to a small extent, 9 percent to a moderate extent, and 2 percent to a large extent. The 66 percent of the students who reported not using simulation software at all had higher average scores than students who reported using it to any extent.

Thirty percent of the students reported using a computer to a small extent to put history or geography information into tables, charts, or graphs. Sixteen percent of students used a computer to a moderate or large extent for this purpose and over one-half (55 percent) of students never used a computer for this purpose. Students who reported carrying on these activities to a small extent had higher average scores than those who engaged in them either more or not at all. Students who said they did not do these activities at all outperformed students who did them to a large extent.

Table 4.8

Percentage of students and average geography scale scores by students' reports on computer use for history and geography, grade 12: 2001

Think about all the courses since the 9th grade in which you have studied history or geography. To what extent have you used computers to do the following? For this question include both work in class and homework assignments.	2001
Research projects using a CD or the Internet	
Not at all	26 274
Small extent	32 285
Moderate extent	29 290
Large extent	13 292
Use exploration/simulation software	
Not at all	66 287
Small extent	23 281
Moderate extent	9 276
Large extent	2 278
Tables, charts, or graphs on the computer	
Not at all	55 284
Small extent	30 288
Moderate extent	12 281
Large extent	4 277

Students who used electronic information retrieval had higher scores than those who did not.

The percentage of students is listed first with the corresponding average scale score presented below.

NOTE: Percentages may not add to 100 due to rounding.

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2001 Geography Assessment.

Student Interest in Geography Grades 8 and 12

Interest in geography may increase a student's efforts to learn the subject, either in school or independently. The NAEP 2001 assessment asked students in grades 8 and 12 to indicate whether geography was one of their favorite subjects, whether they like most other subjects better than geography, or whether they never studied geography. As shown in table 4.9, most eighth-grade students in 2001 preferred subjects other than geography. Only 20 percent indicated that geography was one of their favorites. However, these students outperformed students who liked other subjects better.

At grade 12, the percentage of students who preferred subjects other than geography increased from 63 percent to 72 percent between 1994 and 2001 even as the percentage of students who reported never taking a geography class declined (from 23 percent to 13 percent). Only 15 percent of students in 2001 chose geography as one of their favorite subjects. However, those students had higher average scores than the students who did not favor geography.

Table 4.9

Percentage of students and average geography scale scores by students' reports on how much they like studying geography, grades 8 and 12: 1994 and 2001

Grades 8 & 12

How Much Eighth- and Twelfth-Grade Students Like Geography

How much do you like studying geography?	1994	2001
Grade 8		
One of my favorite subjects	19 274	20 275
Like other subjects better	67 260	69 263
Never studied geography	14 241	11 * 247
Grade 12		
One of my favorite subjects	14 297	15 293
Like other subjects better	63 285	72 * 285
Never studied geography	23 277	13 * 278

Students who favored geography had the highest scores.

The percentage of students is listed first with the corresponding average scale score presented below.

* Significantly different from 1994.

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and 2001 Geography Assessments.

5

Becoming a More Inclusive National Assessment

Chapter Contents

Two Sets of 2001 Geography Results

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In its efforts to assess a representative sample of all students in the nation, NAEP has consistently striven to include special-needs students—those with disabilities (SD) and/or limited English proficiency (LEP). A certain percentage of such students, however, has always been excluded because they could not be assessed meaningfully without accommodations. Schools that participate in NAEP have been permitted to exclude certain students who have been classified as having a disability under the Individuals with Disabilities Education Act (IDEA), based upon their Individualized Education Programs (IEP) and Section 504 of the Rehabilitation Act of 1973. Similarly, schools have been permitted to exclude some students they identify as being limited English proficient.[1]

Chapter Focus

How would the NAEP results differ if accommodations were permitted for special-needs students?

In order to assess a more inclusive sample, and in an attempt to remain consistent with state- and district-level testing policies that increasingly offer accommodations to special-needs students, NAEP began to explore the use of accommodations in the 1996 and 1998 assessments. A split-sample design was used to identify a portion of schools that could provide accommodations to their special-needs students who required them, and a portion of schools in which accommodations would not be offered (the standard administration procedure prior to 1996). The split-sample design made it possible to study the effects on NAEP results of including special-needs students who required and were provided accommodations, while at the same time, obtaining results that were comparable to those from previous assessments. Based on research conducted and published since that time, it was determined that NAEP could begin a transition to reporting results that included the performance of accommodated special-needs students.[2] It is anticipated that in the near future, NAEP will only report results that include accommodated special-needs students.

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[1] See appendix A for a description of specific criteria provided to assist them in making exclusion decisions.

Two Sets of 2001 NAEP Geography Results

This report is the first to display two different sets of NAEP geography results based on the split-sample design: 1) those that reflect the performance of regular and special-needs students when accommodations were not permitted; and 2) those that reflect the performance of regular and special-needs students—both those who were accommodated and those who could be tested without accommodations—when accommodations were permitted. It should be noted that accommodated students make up a small proportion of the total weighted number of students assessed (see table A.6, page 124 in appendix A for details). Making accommodations available may change the overall assessment results in subtle and different ways. For example, when accommodations are permitted, there may be some occurrences of students being accommodated who might have taken the test under standard conditions if accommodations were not permitted. This could lead to an overall increase in the average assessment results if accommodations were to increase special-needs students' performance. Conversely, when accommodations are permitted, special-needs students who could not have been tested without accommodations could be included in the sample. Assuming that these are generally lower-performing students, their inclusion in the sample—even with accommodations—could result in an overall lower average score.

The two sets of results presented in this chapter were obtained by administering the assessment to a nationally representative sample of students and schools. In one sample, no accommodations were permitted; all students were assessed under the same conditions that were the basis for reporting results from the 1994 NAEP geography assessment. In another sample, accommodations were permitted for SD and/or LEP students who normally receive accommodations in their district or state assessment programs. Most accommodations that schools routinely provide for their own testing programs were permitted.

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[2] Olson, J. F. & Goldstein, A. A. (1997). *The inclusion of students with disabilities and limited-English-proficient students in large-scale assessments: A summary of recent progress.* (NCES Publication No. 97-482). Washington, DC: National Center for Education Statistics.

Mazzeo, J., Carlson, J. E., Voelkl, K. E., & Lutkus, A. D. (1999). *Increasing the participation of special needs students in NAEP: A report on 1996 research activities.* (NCES Publication No. 2000-473). Washington, DC: National Center for Education Statistics.

The permitted accommodations included, but were not limited to, the following:

- ☐ one-on-one testing;
- ☐ bilingual dictionary;
- ☐ small-group testing;
- ☐ extended time;
- ☐ oral reading of questions/directions; and
- ☐ use of an aide for transcribing responses.

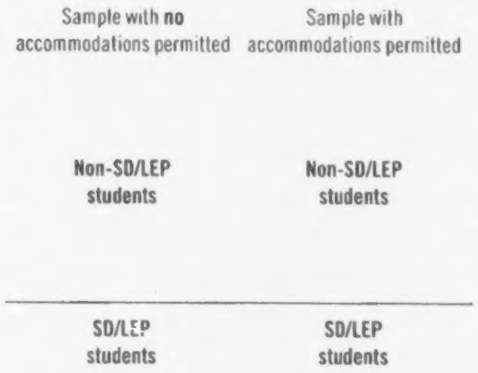
(See appendix A, table A.7, page 126, for greater detail on the numbers and percentages of students accommodated by accommodation type in the 2001 assessment.)

Figure 5.1 provides a visual representation of how the two sets of results were based on the two samples in 2001. Included in both sets of results (accommodations not permitted and accommodations permitted) are those students from both samples of schools who were not identified as either SD and/or LEP. In addition, the first set of results (accommodations not permitted) includes SD and/or LEP students from the sample of schools where accommodations were not permitted (see middle portion of figure 5.1). This is the set of results that allows for trend comparisons back to 1994 and are presented in the other chapters of this report.

The second set of results, accommodations permitted (see bottom portion of figure 5.1), includes SD and/or LEP students from the sample of schools where accommodations were permitted. This is the set of results that form the new, more inclusive baseline for future reporting of trend comparisons for the NAEP geography assessment.

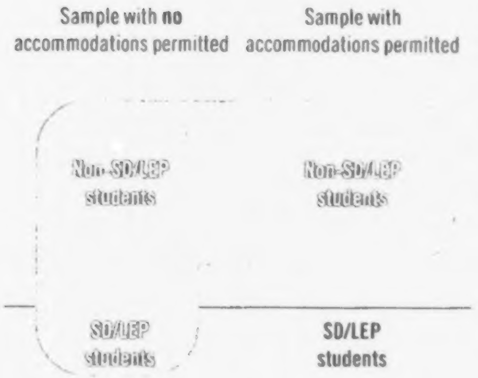
Figure 5.1 Split-Sample Design

The two sets of NAEP results based on a split-sample design


Sample with no accommodations permitted
Sample with accommodations permitted
Non-SD/LEP students
Non-SD/LEP students
SD/LEP students
SD/LEP students

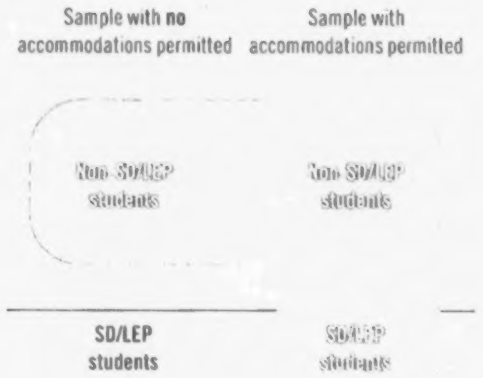
Split-sample design

The national sample was split. In part of the schools, accommodations were not permitted for students with disabilities (SD) and limited English proficient (LEP) students. In the other schools, accommodations were permitted for SD and LEP students who routinely received them in their school assessments.


Sample with no accommodations permitted
Sample with accommodations permitted
Non-SD/LEP students
Non-SD/LEP students
SD/LEP students
SD/LEP students

Accommodations-not-permitted results

The accommodations-not-permitted results include the performance of students from both samples who were not classified as SD or LEP and the performance of SD and LEP students from the sample in which no accommodations were permitted.


Sample with no accommodations permitted
Sample with accommodations permitted
Non-SD/LEP students
Non-SD/LEP students
SD/LEP students
SD/LEP students

Accommodations-permitted results

The accommodations-permitted results also include the performance of students from both samples who were not classified as SD or LEP; however, the SD and LEP students whose performance is included in this set of results were from the sample in which accommodations were permitted. Since students who required testing accommodations could be assessed and represented in the overall results, it was anticipated that these results would include more special-needs students and reflect a more inclusive sample.

In the NAEP 2001 sample where accommodations were not permitted, 16 percent of the students in fourth grade, 16 percent in eighth grade, and 11 percent in twelfth grade were identified by their schools as having special needs (i.e., either as SD or LEP students). In the other sample where accommodations were offered, 17 percent of the students in the fourth grade, 16 percent of students in the eighth grade, and 10 percent in the twelfth grade were identified as having special needs. In the sample where accommodations were not permitted, between 44 and 48 percent of the special-needs students at each of the three grade levels (between 5 and 8 percent of all students—see appendix A, table A.5, page 123) were excluded from NAEP testing by their schools. In the sample where accommodations were offered, between 23 and 24 percent of the special-needs students were excluded from the assessment (between 2 and 4 percent of the total sample).

Because the split-sample design was not used in 1994, trend data for accommodated students are not available. Therefore, this chapter compares only the two sets of results from the 2001 geography assessment. Overall results are provided for the nation and for student subgroups by gender and by race/ethnicity. These results are discussed in terms of statistically significant differences between the two sets of results and differences between subgroups of students within each set of results. Throughout this chapter, the assessment results that include SD and/or LEP students for whom accommodations were not permitted will be referred to as the "accommodations-not-permitted" results. The set of results that includes SD and/or LEP students for whom accommodations were permitted will be referred to as the "accommodations-permitted" results.

Results for the Nation

Accommodations Not Permitted and Accommodations Permitted

Table 5.1 displays the average geography scale scores for the nation in 2001 for two sets of results: 1) accommodations not permitted, and 2) accommodations permitted. There were no statistically significant differences in the average scores between the two sets of results at grades 4 and 12. At grade 8, however, the average score when accommodations were permitted was lower than the average score when accommodations were not permitted.

Table 5.1 Comparison of Two Sets of National Scale Score Results

National average geography scale scores by type of results, grades 4, 8, and 12: 2001

	Accommodations not permitted	Accommodations permitted
Grade 4	209	208
Grade 8	262	260 †
Grade 12	285	284

† Significantly different from the sample where accommodations were not permitted.
SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2001 Geography Assessment.

As noted in the introduction to this chapter, NAEP has always sought to include special-needs students proportional to their representation in the U.S. population. Offering accommodations tends to reduce exclusion rates for special-needs students, and therefore allows NAEP to offer a fairer and more accurate picture of the status of American education. Because special-needs students are typically classified as eligible for special educational services after having shown some difficulty in the regular learning environment, some may assume that including the performance of these students would tend to lower the overall results. This assumption appears to have been justified only in the observed difference between the two sets of geography results in 2001 in grade 8, where the accommodations-permitted results, which included slightly more special-needs students because of the availability of accommodations, were lower than the accommodations-not-permitted results. It is important to examine the percentages of students attaining the NAEP achievement levels, however, to see if there were higher percentages at the lower performance ranges (i.e., below *Basic* and *Basic*), when students were assessed with accommodations.

Table 5.2 shows the percentages of students attaining each of the achievement levels. The percentages are similar across the two sets of results for grades 4 and 12; apparent differences between the accommodations-not-permitted and the accommodations-permitted results were not significantly different. At grade 8, however, the percentage of students at or above *Basic* was higher when accommodations were not permitted than when they were permitted.

Table 5.2 Comparison of Two Sets of National Achievement-Level Results

Percentage of students within and at or above geography achievement levels by type of results, grades 4, 8, and 12: 2001

	Below *Basic*	At *Basic*	At *Proficient*	At *Advanced*	At or above *Basic*	At or above *Proficient*
Grade 4						
Accommodations were not permitted	26	53	19	2	74	21
Accommodations were permitted	27	52	19	2	73	20
Grade 8						
Accommodations were not permitted	26	44	26	4	74	30
Accommodations were permitted	28 †	43	25	4	72 †	29
Grade 12						
Accommodations were not permitted	29	47	23	1	71	25
Accommodations were permitted	29	47	23	1	71	24

† Significantly different from the sample where accommodations were not permitted.

NOTE: Percentages within each geography achievement-level range may not add to 100, or to the exact percentages at or above achievement levels, due to rounding.

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2001 Geography Assessment.

National Results by Gender

Accommodations Not Permitted and Accommodations Permitted

The average geography scale scores by gender for both sets of results in 2001 are provided in table 5.3. Male students at grade 8 had higher geography scores when accommodations were not permitted than when accommodations were permitted.

Table 5.3 Comparison of Two Sets of National Scale Score Results by Gender

National average geography scale scores by gender and type of results, grades 4, 8, and 12: 2001

	Male	Female
Grade 4		
Accommodations were not permitted	212	207
Accommodations were permitted	210	206
Grade 8		
Accommodations were not permitted	264	260
Accommodations were permitted	262 †	258
Grade 12		
Accommodations were not permitted	287	282
Accommodations were permitted	287	281

† Significantly different from the sample where accommodations were not permitted.

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2001 Geography Assessment.

As noted in chapter 3, in 2001, male students at all three grades where accommodations were not offered had higher scale scores than female students. The same pattern continued where accommodations were offered—male students had higher average scale scores than female students in all three grades.

The percentages of male and female students attaining the *Basic*, *Proficient*, and *Advanced* levels are provided in table 5.4. Comparing the two sets of results in 2001, there were no statistically significant differences by accommodation status in the percentages of male or female students attaining each of the achievement levels at grades 4, 8, or 12.

Table 5.4 Comparison of Two Sets of National Achievement-Level Results by Gender

Percentage of students within and at or above geography achievement levels by gender and type of results, grades 4, 8, and 12: 2001

	Below *Basic*	At *Basic*	At *Proficient*	At *Advanced*	At or above *Basic*	At or above *Proficient*
Grade 4						
Male						
Accommodations were not permitted	25	51	21	3	75	24
Accommodations were permitted	26	51	21	3	74	23
Female						
Accommodations were not permitted	28	54	17	1	72	18
Accommodations were permitted	29	54	16	1	71	18
Grade 8						
Male						
Accommodations were not permitted	25	42	29	5	75	33
Accommodations were permitted	27	41	27	4	73	32
Female						
Accommodations were not permitted	27	47	24	3	73	26
Accommodations were permitted	29	45	23	3	71	26
Grade 12						
Male						
Accommodations were not permitted	27	45	26	2	73	28
Accommodations were permitted	26	45	26	2	74	28
Female						
Accommodations were not permitted	30	48	20	1	70	21
Accommodations were permitted	32	48	19	1	68	20

NOTE: Percentages within each geography achievement-level range may not add to 100, or to the exact percentages at or above achievement levels, due to rounding.
SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2001 Geography Assessment.

National Results by Race/Ethnicity

Accommodations Not Permitted and Accommodations Permitted

NAEP assessments across academic subjects have typically reported large score differences according to race and ethnic group membership. If SD and/or LEP students are over-represented in a particular racial or ethnic group, that group's assessment scores may decrease. Table 5.5 provides the average geography scale scores for each of the race/ethnicity categories for the two sets of results in 2001. There were no statistically significant differences in average scores for any racial/ethnic group at any grade, between the samples where accommodations were not permitted and where accommodations were permitted.

Table 5.5 Comparison of Two Sets of National Scale Score Results by Race/Ethnicity

National average geography scale scores by race/ethnicity and type of results, grades 4, 8, and 12: 2001

	White	Black	Hispanic	Asian/Pacific Islander	American Indian
Grade 4					
Accommodations were not permitted	222	181	184	212	199
Accommodations were permitted	220	181	185	216	199
Grade 8					
Accommodations were not permitted	273	234	240	266	261
Accommodations were permitted	271	232	238	267	259
Grade 12					
Accommodations were not permitted	291	260	270	286	288
Accommodations were permitted	292	258	269	285	286

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2001 Geography Assessment.

As noted in chapter 3, a pattern of performance differences by race/ethnicity can be seen in the accommodations-not-permitted results in 2001. Both White and Asian/Pacific Islander students at all three grades scored higher, on average, than Black and Hispanic students. The same pattern can be observed at all three grades in the accommodations-permitted results. In addition, Hispanic students had higher scores than Black students regardless of accommodations condition at grades 8 and 12. At grade 4, however, regardless of accommodation conditions, there was no significant difference between the scores of Black and Hispanic students.

The relative standing of the performance of American Indian students changes by grade level. At grade 4, American Indian students had lower average scores than White students regardless of accommodation condition. At grades 8 and 12, however, the scores of American Indian students were not significantly different than White students within either accommodation condition.

The percentages of students in each race/ethnicity category who attained the *Basic*, *Proficient*, and *Advanced* levels are provided in table 5.6. No statistically significant differences were found at any of the three grades between the accommodations-not-permitted results and the accommodations-permitted results for the percentages of students attaining each of the achievement levels in 2001.

Table 5.6 Comparison of Two Sets of National Achievement-Level Results by Race/Ethnicity

Percentage of students within and at or above geography achievement levels by race/ethnicity and type of results, grades 4, 8, and 12: 2001

	Below *Basic*	At *Basic*	At *Proficient*	At *Advanced*	At or above *Basic*	At or above *Proficient*
Grade 4						
White						
Accommodations were not permitted	13	58	26	3	87	29
Accommodations were permitted	15	57	25	3	85	28
Black						
Accommodations were not permitted	56	39	5	#	44	5
Accommodations were permitted	56	40	4	#	44	4
Hispanic						
Accommodations were not permitted	51	43	6	#	49	6
Accommodations were permitted	49	45	5	#	51	6
Asian/Pacific Islander						
Accommodations were not permitted	23	52	23	1	77	25
Accommodations were permitted	18	57	24	2	82	25
American Indian						
Accommodations were not permitted	34	53	13	#	66	13
Accommodations were permitted	37	51	12	#	63	12
Grade 8						
White						
Accommodations were not permitted	14	48	34	5	86	39
Accommodations were permitted	16	46	33	5	84	38
Black						
Accommodations were not permitted	60	34	6	#	40	6
Accommodations were permitted	62	32	6	#	38	6
Hispanic						
Accommodations were not permitted	52	38	9	1	48	10
Accommodations were permitted	54	37	9	1	46	9
Asian/Pacific Islander						
Accommodations were not permitted	21	47	28	4	79	32
Accommodations were permitted	20	49	28	4	80	32
American Indian						
Accommodations were not permitted	28	41	29	3	72	31
Accommodations were permitted	30	46	21	3	70	24
Grade 12						
White						
Accommodations were not permitted	19	51	29	2	81	31
Accommodations were permitted	19	51	29	2	81	31
Black						
Accommodations were not permitted	65	31	4	#	35	4
Accommodations were permitted	67	30	3	#	33	3
Hispanic						
Accommodations were not permitted	48	42	10	#	52	10
Accommodations were permitted	50	42	9	#	50	9
Asian/Pacific Islander						
Accommodations were not permitted	28	45	25	1	72	26
Accommodations were permitted	29	46	23	1	71	25
American Indian						
Accommodations were not permitted	26	41	31	1	74	32
Accommodations were permitted	29	41	29	1	71	30

# Percentage is between 0.0 and 0.5.

NOTE: Percentages within each geography achievement-level range may not add to 100, or to the exact percentages at or above achievement levels, due to rounding.

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2001 Geography Assessment.

6

Sample Assessment Questions And Student Responses

Chapter Contents

Sample Questions

Student Responses

Item Maps

Chapter Focus

Sample materials from the 2001 geography assessment

This chapter presents sample questions from the 2001 NAEP geography assessment. Four sample questions at each grade are provided, including multiple-choice and constructed-response questions. Each sample is classified according to its geography content area, as described in the geography framework. The constructed-response questions are accompanied by actual student responses, reproduced from test booklets, that illustrate work at different rating levels. The constructed-response samples were rated using either a three-point or four-point scoring rubric. Three-point questions were rated as "Complete," "Partial," or "Inappropriate." Four-point questions were rated as "Complete," "Essential," "Partial," or "Inappropriate. " Sample responses are included for each level except "Inappropriate."

The table accompanying each sample question presents two types of performance data: the overall percentage of students who answered successfully, and the percentage of students who answered successfully within a specific score range on the NAEP geography scale. The score ranges correspond to the three achievement-level intervals—*Basic, Proficient*, and *Advanced*—as well as the range below *Basic*. These percentages give some indication of how difficult the question was for students who performed within each of the achievement-level ranges.

Many additional sample questions released from the 1994 and 2001 NAEP geography assessments are available for viewing on the NAEP Web Site at http://www.nces.ed.gov/nationsreportcard/itmrls/. The item-viewing feature of the Web Site includes student performance data for all questions, detailed scoring guides (rubrics), and sample student responses for the constructed-response questions.

Grade 4 Sample Assessment Questions and Results

Questions in the grade 4 assessment cover a wide variety of geographic concepts and skills across the three geography content areas. A somewhat higher percentage of questions is devoted to United States geography than at the two higher grades where increasing emphasis is placed on world geography.

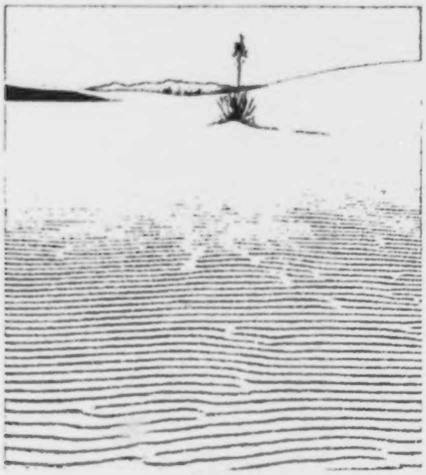
Many of the questions at all three grades are based upon visual or textual stimuli designed to make the assessment more interesting and more authentic. Visual stimuli include maps, charts, graphs, diagrams, cartoons, and, as in sample question 1, photographs.

The sample questions are also marked on the item maps on pages 110-112. The item map location of each question identifies the scale score at which that question was answered successfully by at least 65 percent of the students for constructed-response questions and 74 percent of the students for four-option multiple-choice questions.

In sample question 1, students are assessed on whether they can recognize a photographic representation of a landscape and associate irrigation with the landscape depicted. This question is mapped at scale score 216.

Grade 4 Sample Question 1:

Geography Content Area: Environment and Society



© Fritz Henle/Photo Researchers, Inc.

Look at the photograph above. What would help farmers in this area grow more food?

Ⓐ Cutting down forests

Ⓑ Making terraces

Ⓒ Building houses

○ Irrigating the land

Table 6.1 Sample Question 1 Results (Multiple-Choice)

Overall percentage correct and percentages correct within each achievement-level range: 2001

Grade 4	Percentage correct within achievement-level intervals			
Overall percentage correct	**Below *Basic* 186 and below***	***Basic* 187–239***	***Proficient* 240–275***	***Advanced* 276 and above***
70	50	74	84	***

*NAEP geography composite scale range.

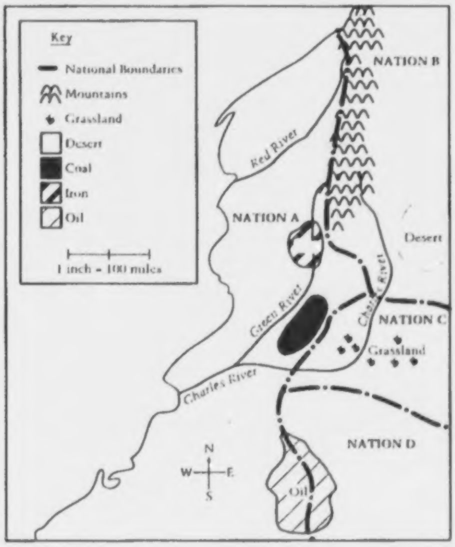
***Sample size is insufficient to permit a reliable estimate (see appendix A).

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2001 Geography Assessment.

Sample question 2 measures students' understanding of how geography plays a role in conflict among countries. Students found this question to be quite difficult, with only one-third answering correctly. This question appears on the item map at scale score 271.

Grade 4 Sample Question 2:

Geography Content Area: Spatial Dynamics and Connections



Which two nations are most likely to have a conflict over mineral resources?

Ⓐ Nation A and Nation B

Ⓑ Nation A and Nation C

○ Nation A and Nation D

Ⓓ Nation C and Nation D

Table 6.2 Sample Question 2 Results (Multiple-Choice)

Overall percentage correct and percentages correct within each achievement-level range: 2001

Grade 4	Percentage correct within achievement-level intervals			
Overall percentage correct	Below ***Basic*** **186 and below***	***Basic*** **187–239***	***Proficient*** **240–275***	***Advanced*** **276 and above***
33	22	28	56	***

*NAEP geography composite scale range.

***Sample size is insufficient to permit a reliable estimate (see appendix A).

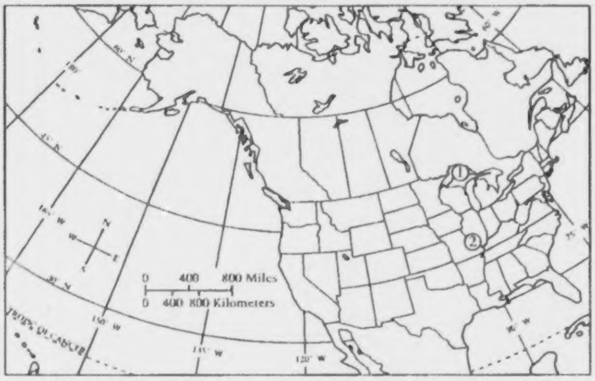
SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2001 Geography Assessment.

Sample question 3 is one of a number of production tasks included in the NAEP geography assessment in which students are asked to locate a place on a map or draw a map in their test booklet. Responses to this question were scored with a three-level rubric as "Complete," "Partial," or "Inappropriate." Two-thirds of students could correctly identify where they lived. This question appears on the item map at scale score 192. (Note that the circled numbers on the map were used in a different question that was also based on this map.)

Grade 4 Sample Question 3:

Geography Content Area: Space and Place

UNITED STATES AND CANADA



Write down the name of the state or district where you live.

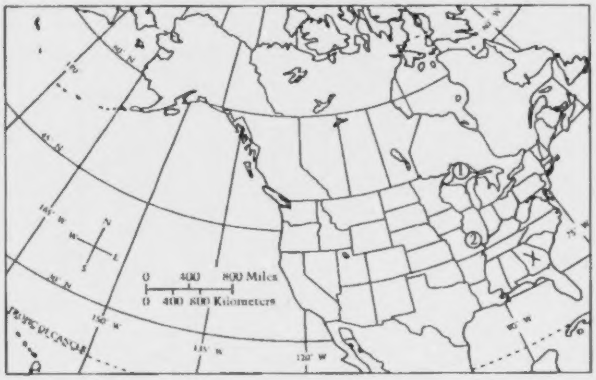
I live in____ .

Directly on the map, draw an "X" on the state or district where you live.

To earn a score of "Complete" on this question, students had to write the name of the state or district where they live and correctly mark the location on the map.

Sample "Complete" Response:

UNITED STATES AND CANADA



Write down the name of the state or district where you live.

I live in Georgia .

Directly on the map, draw an "X" on the state or district where you live.

Table 6.3a Sample Question 3 Results ("Complete" Short-Constructed-Response)

Overall percentage "Complete" and percentages "Complete" within each achievement-level range: 2001

Grade 4	**Percentage "Complete" within achievement-level intervals**			
Overall percentage "Complete"	Below ***Basic*** 186 and below*	***Basic*** 187–239*	***Proficient*** 240–275*	***Advanced*** 276 and above*
66	38	71	88	***

*NAEP geography composite scale range.

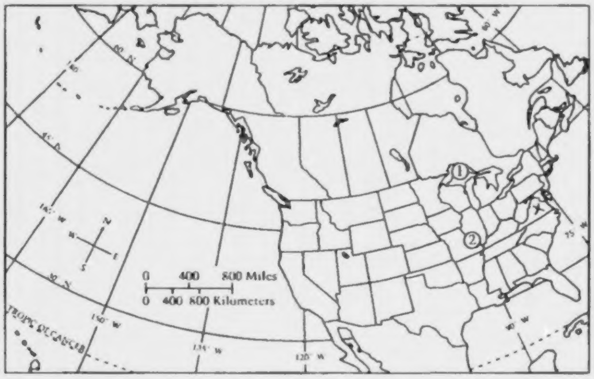
***Sample size is insufficient to permit a reliable estimate (see appendix A).

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2001 Geography Assessment.

To earn a score of "Partial," students could indicate their state or district and mark a bordering state, or they could indicate the city or town in which they live and mark the correct state in which that city lies. In the sample below, the student lives in North Carolina but marked Virginia on the map.

Sample "Partial" Response:

UNITED STATES AND CANADA



Write down the name of the state or district where you live.

I live in north carolina .

Directly on the map, draw an "X" on the state or district where you live.

Table 6.3b Sample Question 3 Results ("Partial" Short-Constructed-Response)

Overall percentage "Partial" or better and percentages "Partial" or better within each achievement-level range: 2001

Grade 4	Percentage "Partial" or better within achievement-level intervals			
Overall percentage "Partial" or better	Below ***Basic*** **186 and below***	***Basic*** **187–239***	***Proficient*** **240–275***	***Advanced*** **276 and above***
72	43	78	93	***

*NAEP geography composite scale range.

***Sample size is insufficient to permit a reliable estimate (see appendix A).

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2001 Geography Assessment.

A more complex production task is seen in sample question 4. Here, students must use written descriptions of features of a town to sketch a map on a grid. They must understand scale, distance, and direction, and be able to read and use a map key. Responses were scored with a four-level rubric as "Complete," "Essential," "Partial," or "Inappropriate." The question was difficult for fourth-graders, with only 28 percent providing an "Essential" or better response. The item map scale score point for this question is 295.

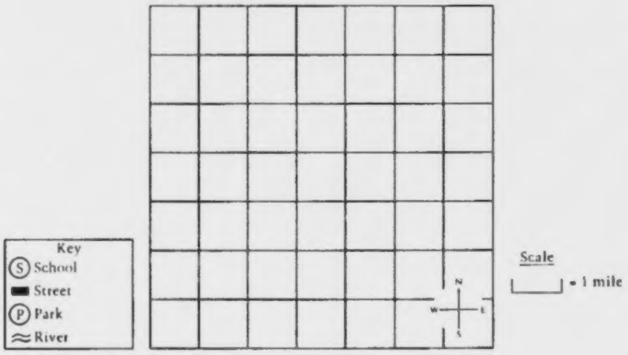
Grade 4 Sample Question 4:

Geography Content Area: Space and Place

LITTLE TOWN

- Width: 4.0 miles east to west
- Length: 3.0 miles north to south
- Main Street runs east to west through the town.
- The school is on the northeast side of town.
- Phelps Park is on the southwest side of town.
- Runt River runs north to south through the town.

On the grid below, each square is one mile wide and one mile long. Draw a map of Little Town on the grid. Draw the town's borders. Then, use the symbols in the key below to draw the features listed above.



Responses scored "Complete" correctly located all four features and drew the length and width to scale in the correct directions.

Sample "Complete" Response:

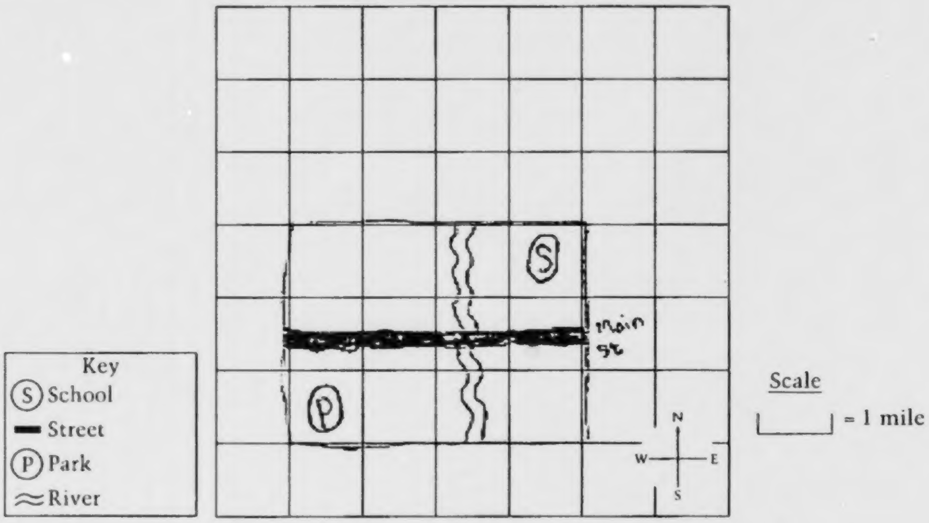


Table 6.4a Sample Question 4 Results ("Complete" Extended-Constructed-Response)

Overall percentage "Complete" and percentages "Complete" within each achievement-level range: 2001

Grade 4	Percentage "Complete" within achievement-level intervals			
Overall percentage "Complete"	Below *Basic* 186 and below*	*Basic* 187–239*	*Proficient* 240–275*	*Advanced* 276 and above*
11	0	6	32	***

*NAEP geography composite scale range.
***Sample size is insufficient to permit a reliable estimate (see appendix A).
SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2001 Geography Assessment.

Responses scored "Essential" correctly located four features but not to scale, or correctly located three features and had the scale correct.

Sample "Essential" Response:

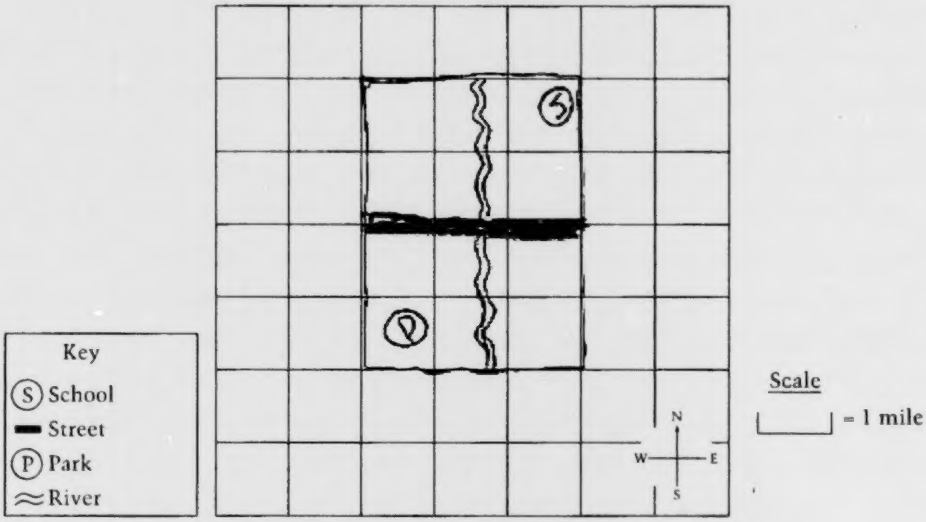


Table 6.4b Sample Question 4 Results ("Essential" Extended-Constructed-Response)

Overall percentage "Essential" or better and percentages "Essential" or better within each achievement-level range: 2001

Grade 4	Percentage "Essential" or better within achievement-level intervals			
Overall percentage "Essential" or better	**Below *Basic* 186 and below***	***Basic* 187–239***	***Proficient* 240–275***	***Advanced* 276 and above***
28	1	25	65	***

*NAEP geography composite scale range.
***Sample size is insufficient to permit a reliable estimate (see appendix A).
SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2001 Geography Assessment.

Responses scored "Partial" located only one or two features and had the scale correct, or located three features with an incorrect scale.

Sample "Partial" Response:

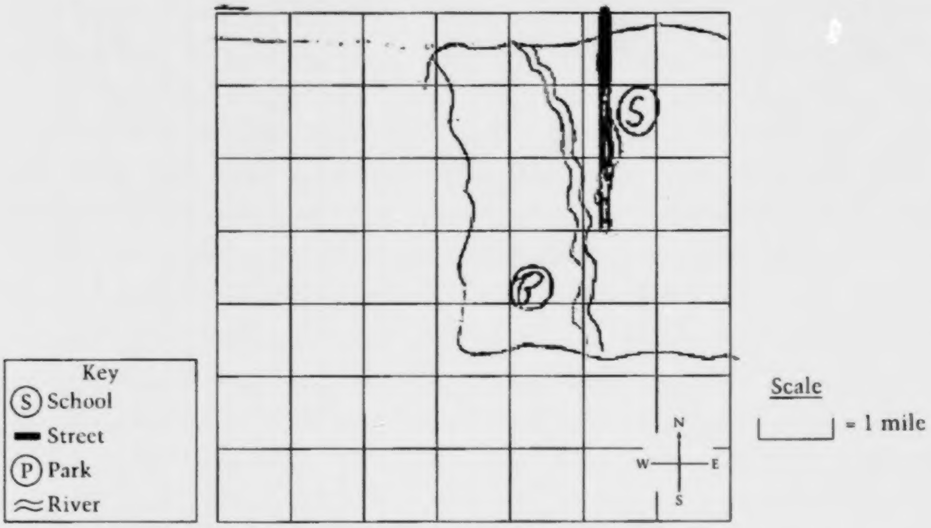


Table 6.4c Sample Question 4 Results ("Partial" Extended-Constructed-Response)

Overall percentage "Partial" or better and percentages "Partial" or better within each achievement-level range: 2001

Grade 4	Percentage "Partial" or better within achievement-level intervals			
Overall percentage "Partial" or better	Below *Basic* 186 and below*	*Basic* 187–239*	*Proficient* 240–275*	*Advanced* 276 and above*
38	4	36	78	***

*NAEP geography composite scale range.

***Sample size is insufficient to permit a reliable estimate (see appendix A).

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2001 Geography Assessment.

Grade 8 Sample Assessment Questions and Results

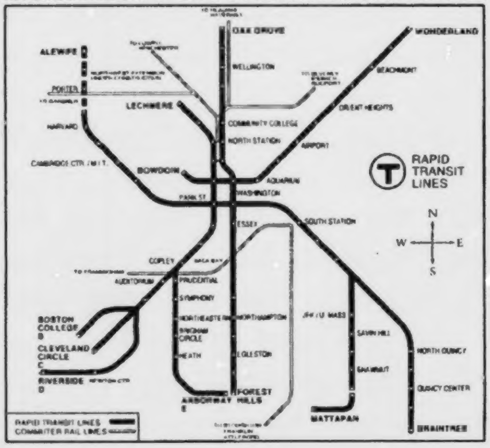
The assessment at grade 8, like that at grade 4, covers a wide range of geography skills and concepts. The questions, on average, look for a deeper understanding of the material and require students to grapple with more sophisticated stimuli, compare multiple maps, and apply geographic understanding to solving problems.

In this multiple-choice question students are asked to interpret a kind of map they may never have seen to determine exactly what kind of information it provides and doesn't provide. It was a fairly easy task for students. The scale score point for this question on the eighth-grade item map is 257.

Grade 8 Sample Question 5:

Geography Content Area: Spatial Dynamics and Connections

MASSACHUSETTS BAY TRANSIT AUTHORITY RAPID TRANSIT LINES



Which question could you answer based only on the information in the map?

Ⓐ At what times do the public trains arrive?

Ⓑ How much time does it take to go from Forest Hills to Oak Grove?

Ⓒ How many miles is it from one station to another?

○ How can one travel from Alewife to the Aquarium by public train?

Table 6.5 Sample Question 5 Results (Multiple-Choice)

Overall percentage correct and percentages correct within each achievement-level range: 2001

Grade 8	Percentage correct within achievement-level intervals			
Overall percentage correct	Below *Basic* 241 and below*	*Basic* 242–281*	*Proficient* 282–314*	*Advanced* 315 and above*
70	37	74	91	97

*NAEP geography composite scale range.

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2001 Geography Assessment.

Sample question 6 asks about an important aspect of physical geography. One-half of eighth-graders knew that the four forces contribute to erosion. This question maps at scale score point 316.

Grade 8 Sample Question 6:

Geography Content Area: Space and Place

How do the forces listed below affect the natural environment?

Gravity
Ice
Water
Wind

○ They are major causes of erosion.

Ⓑ They are important influences on human settlement.

Ⓒ They are responsible for seismic activity.

Ⓓ They cause continental drift.

Table 6.6 Sample Question 6 Results (Multiple-Choice)

Overall percentage correct and percentages correct within each achievement-level range: 2001

Grade 8	Percentage correct within achievement-level intervals			
Overall percentage correct	Below *Basic* 241 and below*	*Basic* 242–281*	*Proficient* 282–314*	*Advanced* 315 and above*
50	36	47	64	***

*NAEP geography composite scale range.
***Sample size is insufficient to permit a reliable estimate (see appendix A).
SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2001 Geography Assessment.

Sample question 7 tests students' knowledge of landforms as well as their skill with what geographers call "mental mapping"—the ability to visualize spatial patterns in one's mind. Students had to create an image of Florida in their minds before they could identify it as a peninsula. Nearly three-quarters of the students answered correctly. The question maps at a scale score of 256.

Grade 8 Sample Question 7:

Geography Content Area: Space and Place

Florida is an example of

Ⓐ an isthmus

Ⓑ an island

○ a peninsula

Ⓓ a plateau

Table 6.7 Sample Question 7 Results (Multiple-Choice)

Overall percentage correct and percentages correct within each achievement-level range: 2001

Grade 8	Percentage correct within achievement-level intervals			
Overall percentage correct	Below *Basic* 241 and below*	*Basic* 242–281*	*Proficient* 282–314*	*Advanced* 315 and above*
74	40	80	93	100

*NAEP geography composite scale range.

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2001 Geography Assessment.

Sample question 8 measures students' understanding of why countries join trans-regional organizations, a topic related to the larger theme of how people from different places work together across space to address common issues. Sixty percent of students answered this moderately difficult question correctly. The item map scale score for this question is 285.

Grade 8 Sample Question 8:

Geography Content Area: Spatial Dynamics and Connections

What is an important reason that countries join international organizations like the United Nations?

Ⓐ Countries who do not join usually lose their independence.

○ Many of the world's problems involve more than one country.

Ⓒ Most citizens want their countries to join as many international organizations as possible.

Ⓓ Such organizations force countries to join.

Table 6.8 Sample Question 8 Results (Multiple-Choice)

Overall percentage correct and percentages correct within each achievement-level range: 2001

Grade 8	Percentage correct within achievement-level intervals			
Overall percentage correct	Below *Basic* 241 and below*	*Basic* 242–281*	*Proficient* 282–314*	*Advanced* 315 and above*
60	40	57	79	96

*NAEP geography composite scale range.

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2001 Geography Assessment.

Sample question 9 is a short-constructed-response question designed to measure students' understanding of the interaction between human beings and the environment. Responses were scored on a three-level rubric as "Complete," "Partial," or "Inappropriate." The question was quite difficult for students, with only 22 percent giving a "Complete" response. On the item map for eighth grade this question appears as scale score 328.

Grade 8 Sample Question 9:

Geography Content Area: Environment and Society

Tropical forests are being destroyed at the rate of at least eleven million hectares each year, an area the size of Pennsylvania. About half of all tropical forests are already gone.

Discuss two major reasons for this high rate of tropical deforestation.

Responses scored "Complete" provided two reasons for the high rate of tropical deforestation. Reasons could relate to demand for land and resources or to the lack of regulation that allows deforestation to occur.

Sample "Complete" Response:

Discuss two major reasons for this high rate of tropical deforestation.

One reason is the building of cities.
The people use the rainforests as land.
Another reason is for agriculture.
They people find the farms more
useful than rainforests.

Table 6.9a Sample Question 9 Results ("Complete" Short-Constructed-Response)

Overall percentage "Complete" and percentages "Complete" within each achievement-level range: 2001

Grade 8	Percentage "Complete" within achievement-level intervals			
Overall percentage "Complete"	Below *Basic* 241 and below*	*Basic* 242–281*	*Proficient* 282–314*	*Advanced* 315 and above*
22	6	18	38	***

*NAEP geography composite scale range.
***Sample size is insufficient to permit a reliable estimate (see appendix A).
SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2001 Geography Assessment.

Responses scored "Partial" provided only one reason for the high rate of tropical deforestation, thereby revealing a more limited knowledge of the subject.

Sample "Partial" Response:

Discuss two major reasons for this high rate of tropical deforestation.

Rainforest are being destroyed because more livable land is needed for the world's increasing population, and Companies use some of the rainforest land for medical research.

Table 6.9b Sample Question 9 Results ("Partial" Short-Constructed-Response)

Overall percentage "Partial" or better and percentages "Partial" or better within each achievement-level range: 2001

Grade 8	Percentage "Partial" or better within achievement-level intervals			
Overall percentage "Partial" or better	Below *Basic* 241 and below*	*Basic* 242–281*	*Proficient* 282–314*	*Advanced* 315 and above*
60	26	62	84	***

*NAEP geography composite scale range.

***Sample size is insufficient to permit a reliable estimate (see appendix A).

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2001 Geography Assessment.

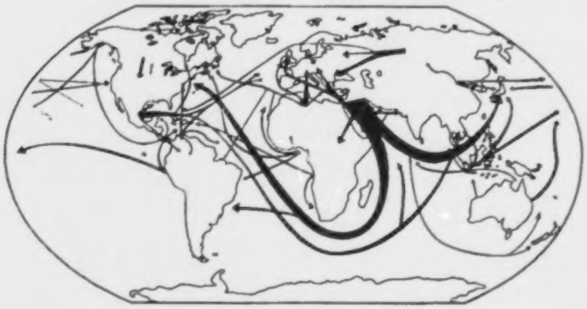
Grade 12 Sample Assessment Questions and Results

The grade 12 assessment included higher percentages of extended-constructed-response questions and questions devoted to non-U.S. geography than the assessments at grades 4 and 8. It also contained the most complex stimuli and challenging concepts.

Sample question 10 is a skills question designed to measure whether students understand the conventions used in what is known as a flow map. A majority of students (78 percent) successfully answered the question. This question appears on the twelfth-grade item map at scale score 272.

Grade 12 Sample Question 10:

Geography Content Area: Space and Place



MOVEMENT OF AN IMPORTANT INTERNATIONAL PRODUCT

The varying widths of the lines on the map most probably indicate the

Ⓐ strength of ocean currents

Ⓑ type of trade

○ volume of trade

Ⓓ type of transportation used

Table 6.10 Sample Question 10 Results (Multiple-Choice)

Overall percentage correct and percentages correct within each achievement-level range: 2001

Grade 12	Percentage correct within achievement-level intervals			
Overall percentage correct	Below *Basic* 269 and below*	*Basic* 270–304*	*Proficient* 305–338*	*Advanced* 339 and above*
78	46	86	99	***

*NAEP geography composite scale range.

***Sample size is insufficient to permit a reliable estimate (see appendix A).

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2001 Geography Assessment.

This straightforward multiple-choice question helps measure students' knowledge of the distribution of world religions. Six out of ten students answered correctly. The item map scale score point for this question is 318.

Grade 12 Sample Question 11:

Geography Content Area: Spatial Dynamics and Connections

What religion is practiced by most people who live in India?

Ⓐ Confucianism

Ⓑ Buddhism

Ⓒ Christianity

○ Hinduism

Table 6.11 Sample Question 11 Results (Multiple-Choice)

Overall percentage correct and percentages correct within each achievement-level range: 2001

Grade 12	Percentage correct within achievement-level intervals			
Overall percentage correct	**Below *Basic* 269 and below***	***Basic* 270–304***	***Proficient* 305–338***	***Advanced* 339 and above***
61	46	62	76	***

*NAEP geography composite scale range.

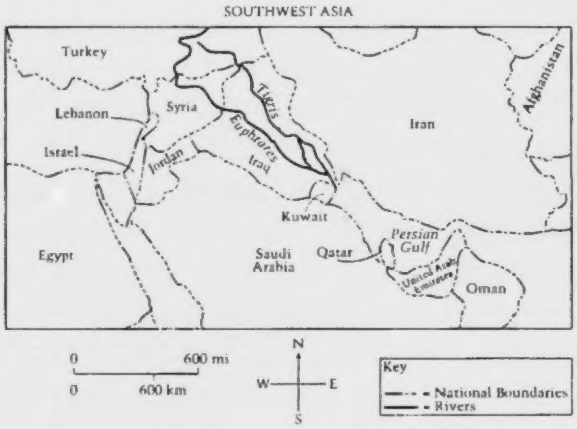
***Sample size is insufficient to permit a reliable estimate (see appendix A).

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2001 Geography Assessment.

Sample question 12 is a map-based, short-constructed-response question dealing with the interaction between humans and the natural environment. Although some students may have been able to answer without referring to the map, others could use it to gain valuable information about the region. Responses were scored on a three-level rubric as "Complete," "Partial," or "Inappropriate." The question was moderately difficult, with 47 percent of students providing a "Complete" response. This question "maps" at scale score 300 for "Complete."

Grade 12 Sample Question 12:

Geography Content Area: Environment and Society



Give two reasons why early civilizations flourished in the valley of the Tigris and Euphrates rivers.

Responses scored "Complete" gave two valid reasons why river valleys were important to the early civilization of Iraq.

Sample "Complete" Response:

Give two reasons why early civilizations flourished in the valley of the Tigris and Euphrates rivers.

The Tigris and Euphrates Rivers made these early civilizations flourish because of farming, trading, and a way of transportation. These rivers were their main source of everything like watering animals and rich, fertile farmland.

Table 6.12a Sample Question 12 Results ("Complete" Short-Constructed-Response)

Overall percentage "Complete" and percentages "Complete" within each achievement-level range: 2001

Grade 12	Percentage "Complete" within achievement-level intervals			
Overall percentage "Complete"	**Below *Basic* 269 and below***	***Basic* 270–304***	***Proficient* 305–338***	***Advanced* 339 and above***
47	17	52	70	***

*NAEP Geography composite scale range.

***Sample size is insufficient to permit a reliable estimate (see appendix A).

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2001 Geography Assessment.

Responses scored "Partial" gave only one valid reason for the importance of the river valley to the early civilization of Iraq.

Sample "Partial" Response:

> Give two reasons why early civilizations flourished in the valley of the Tigris and Euphrates rivers.
>
> Because its was next to the water, and it was a good place to live.

Table 6.12b Sample Question 12 Results ("Partial" Short-Constructed-Response)

Overall percentage "Partial" or better and percentages "Partial" or better within each achievement-level range: 2001

Grade 12	Percentage "Partial" or better within achievement-level intervals			
Overall percentage "Partial" or better	Below *Basic* 269 and below*	*Basic* 270–304*	*Proficient* 305–338*	*Advanced* 339 and above*
76	42	85	96	***

*NAEP Geography composite scale range.

***Sample size is insufficient to permit a reliable estimate (see appendix A).

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2001 Geography Assessment.

Sample question 13 is a short-constructed-response that measures students' ability to read and understand population pyramids. Responses were scored on a three-point rubric as "Complete," "Partial," or "Inappropriate." Students found this question to be very difficult. Sixteen percent received a score of "Complete." This question maps at scale score 347 for "Complete."

Grade 12 Sample Question 13:

Geography Content Area: Spatial Dynamics and Connections

COUNTRY 1
Age Distribution

Male		Female	
Age	% of Total Pop'n	% of Total Pop'n	Age
70 +	1.0%	1.2%	70 +
60-69	1.6%	1.8%	60-69
50-59	2.6%	2.7%	50-59
40-49	3.9%	4.0%	40-49
30-39	5.6%	5.5%	30-39
20-29	7.7%	7.7%	20-29
10-19	10.4%	10.4%	10-19
0-9	17.0%	16.9%	0-9

COUNTRY 2
Age Distribution

Male		Female	
Age	% of Total Pop'n	% of Total Pop'n	Age
70 +	2.9%	4.2%	70 +
60-69	3.7%	4.3%	60-69
50-59	4.7%	4.8%	50-59
40-49	5.8%	5.7%	40-49
30-39	8.2%	8.3%	30-39
20-29	9.3%	9.2%	20-29
10-19	7.5%	7.1%	10-19
0-9	7.3%	7.0%	0-9

Describe the difference in population patterns for people age 60 and over in countries 1 and 2. Give one possible explanation for the difference you have identified.

Responses scored "Complete" had to accurately describe the difference between the population patterns for people age 60 and over in the two countries and give a plausible explanation for the difference.

Sample "Complete" Response:

> Describe the difference in population patterns for people age 60 and over in countries 1 and 2. Give one possible explanation for the difference you have identified.

Country two has a larger portion of the population aged 60 or over. This could be due to a more advanced Medical system leading to a higher life expectancy

Table 6.13a Sample Question 13 Results ("Complete" Short-Constructed-Response)

Overall percentage "Complete" and percentages "Complete" within each achievement-level range: 2001

Grade 12	Percentage "Complete" within achievement-level intervals			
Overall percentage "Complete"	Below ***Basic*** **269 and below***	***Basic*** **270–304***	***Proficient*** **305–338***	***Advanced*** **339 and above***
16	2	15	33	***

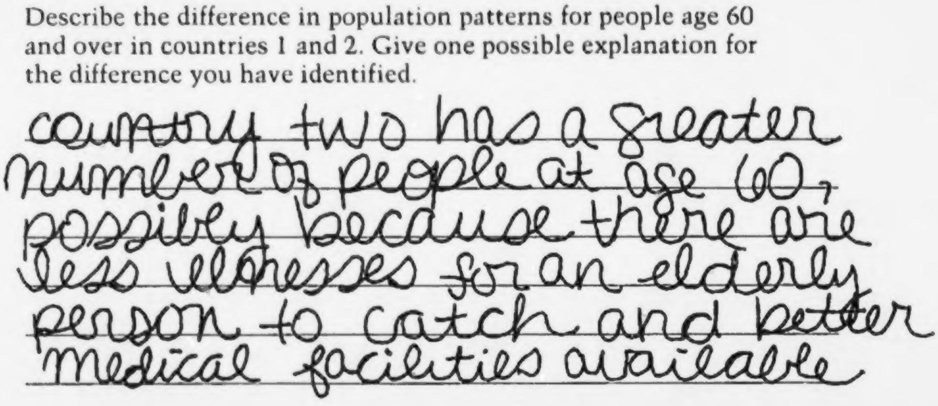
*NAEP geography composite scale range.

***Sample size is insufficient to permit a reliable estimate (see appendix A).

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2001 Geography Assessment.

Responses scored "Partial" either described the difference between the two population pyramids but did not explain the difference or, as in the following example, incorrectly described the difference as one of absolute numbers rather than percentages of the population and gave a plausible explanation.

Sample "Partial" Response:



Describe the difference in population patterns for people age 60 and over in countries 1 and 2. Give one possible explanation for the difference you have identified.

country two has a greater number of people at age 60, possibly because there are less illnesses for an elderly person to catch and better medical facilities available

Table 6.13b Sample Question 13 Results ("Partial" Short-Constructed-Response)

Overall percentage "Partial" or better and percentages "Partial" or better within each achievement-level range: 2001

Grade 12	Percentage "Partial" or better within achievement-level intervals			
Overall percentage "Partial" or better	Below *Basic* 269 and below*	*Basic* 270–304*	*Proficient* 305–338*	*Advanced* 339 and above*
51	18	57	79	***

*NAEP geography composite scale range.

***Sample size is insufficient to permit a reliable estimate (see appendix A).

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2001 Geography Assessment.

Maps of Selected Item Descriptions on the NAEP Geography Scale – Grades 4, 8, and 12

The geography performance of fourth-, eighth-, and twelfth-graders can be illustrated by maps that position item descriptions along the NAEP geography scale where they are likely to be answered successfully by students.[1] The descriptions used on the item maps focus on the geography knowledge or skill needed to answer the question. For multiple-choice questions, the description indicates the knowledge or skill demonstrated by selection of the correct option; for constructed-response questions, the description takes into account the knowledge or skill specified by the different levels of scoring criteria for that question. The questions described on the item maps include the 12 sample questions in the preceding section.

Figures 6.1 through 6.3 are item maps for grades 4, 8, and 12, respectively. The item map location of each question identifies the scale score at which that question was answered successfully by at least 65 percent of the students for constructed-response questions and 74 percent of the students for four-option, multiple-choice questions. For each question indicated on the item map, students whose average score fell at or above the scale point had a higher probability of successfully answering the question. Students whose average score fell below that scale point had a lower probability of successfully answering the question.

As an example of how to interpret the item maps, consider the multiple-choice question in figure 6.1 that maps at score point 271. This question appeared as sample question 2 earlier in the chapter, and was shown to have been a difficult question answered correctly by 33 percent of students. Students whose geography ability corresponds to a score of 271 or above on the scale had at least a 74 percent probability of answering this question correctly. Students whose ability is represented by a score below 271 had less than a 74 percent probability of answering correctly. This does not mean that all of the former students answered the question correctly or that all of the latter students answered it incorrectly. Rather, the item map indicates higher or lower probability of answering correctly depending on students' overall geography ability as measured on the NAEP scale.

The three geography achievement levels are indicated on the item map for each grade. It is important to note that, although the same 0-500 geography scale is used at each grade, the achievement levels are grade-specific, and each achievement level begins at a different score point at each grade. Returning to the example of the question mapping at score point 271, the item map is useful in showing how this difficult question maps relatively high up on the scale. In terms of achievement levels, one sees that students with a 74 percent probability of answering the question correctly performed near the upper end of the *Proficient* achievement-level range.

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[1] Details on the procedures used to develop item maps are provided in appendix A.

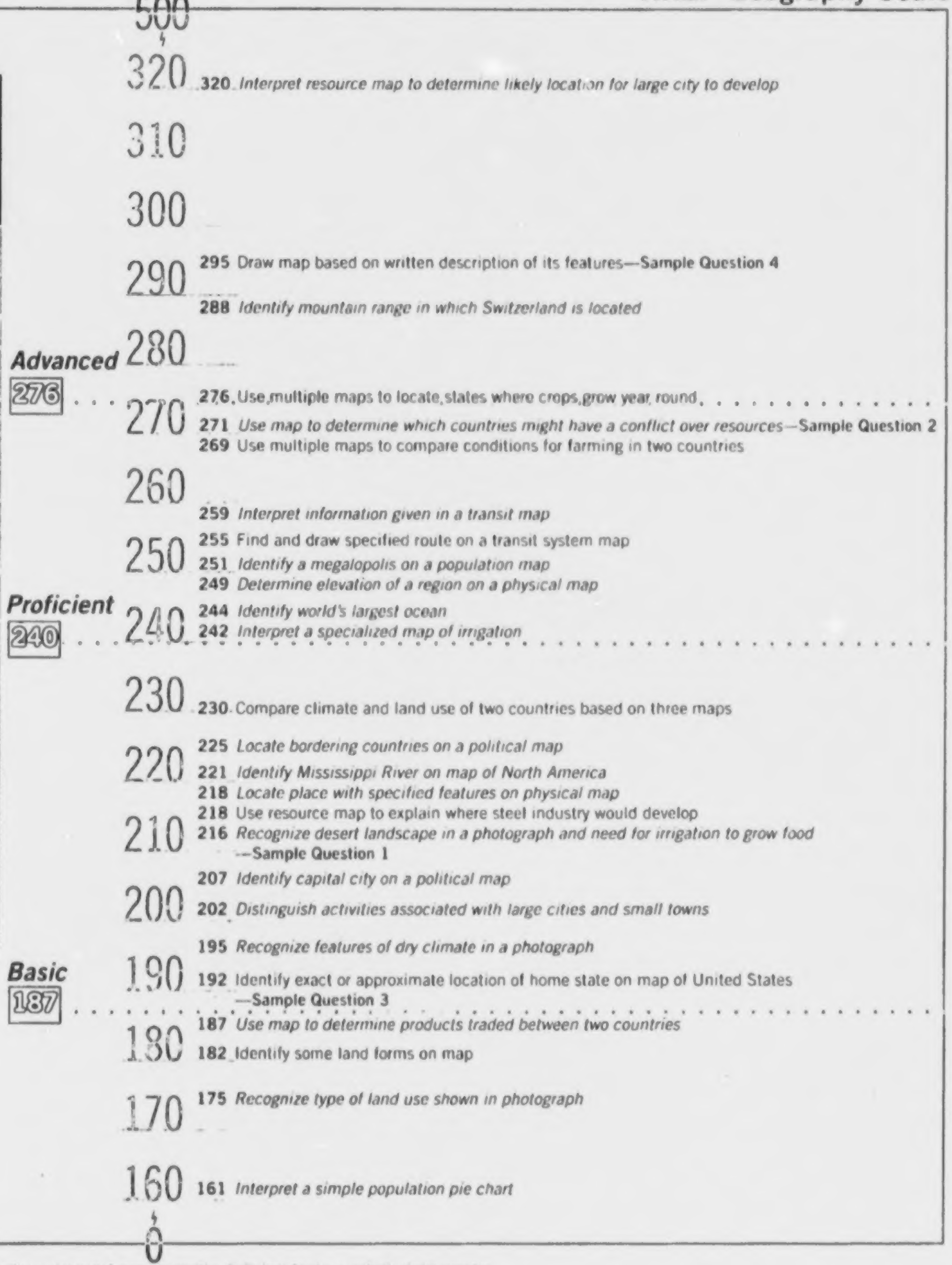
Figure 6.1

Grade 4 Item Map

Map of selected item descriptions on the National Assessment of Educational Progress (NAEP) geography scale for grade 4

This map describes the knowledge or skill associated with answering individual geography questions. The map identifies the score point at which students had a high probability of successfully answering the question.*

NAEP Geography Scale



320 *Interpret resource map to determine likely location for large city to develop*

295 Draw map based on written description of its features—**Sample Question 4**

288 *Identify mountain range in which Switzerland is located*

276 Use multiple maps to locate states where crops grow year round

271 *Use map to determine which countries might have a conflict over resources*—**Sample Question 2**

269 Use multiple maps to compare conditions for farming in two countries

259 *Interpret information given in a transit map*

255 Find and draw specified route on a transit system map

251 *Identify a megalopolis on a population map*

249 *Determine elevation of a region on a physical map*

244 *Identify world's largest ocean*

242 *Interpret a specialized map of irrigation*

230 Compare climate and land use of two countries based on three maps

225 *Locate bordering countries on a political map*

221 *Identify Mississippi River on map of North America*

218 *Locate place with specified features on physical map*

218 Use resource map to explain where steel industry would develop

216 *Recognize desert landscape in a photograph and need for irrigation to grow food*—**Sample Question 1**

207 *Identify capital city on a political map*

202 *Distinguish activities associated with large cities and small towns*

195 *Recognize features of dry climate in a photograph*

192 Identify exact or approximate location of home state on map of United States—**Sample Question 3**

187 *Use map to determine products traded between two countries*

182 Identify some land forms on map

175 *Recognize type of land use shown in photograph*

161 *Interpret a simple population pie chart*

NOTE: Regular type denotes a constructed-response question. Italic type denotes a multiple-choice question.

* Each grade 4 geography question in the 2001 assessment was mapped onto the NAEP 0–500 geography scale. The position of the question on the scale represents the scale score attained by students who had a 65 percent probability of successfully answering a constructed-response question, or a 74 percent probability of correctly answering a four-option multiple-choice question. Only selected questions are presented. Scale score ranges for geography achievement levels are referenced on the map. For constructed-response questions, the question description represents students' performance at the scoring criteria level being mapped.

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2001 Geography Assessment.

Figure 6.2

Grade 8 Item Map

Map of selected item descriptions on the National Assessment of Educational Progress (NAEP) geography scale for grade 8

This map describes the knowledge or skill associated with answering individual geography questions. The map identifies the score point at which students had a high probability of successfully answering the question.*

NAEP Geography Scale

500		
360		
	359	Describe and explain differences in population pyramids
350		
	348	*Use a time zone map*
340		
	338	Use map to explain international trade in oil
330		
	328	Explain two reasons for high rate of tropical deforestation—**Sample Question 9**
320		
	319	*Use multiple maps to explain land use in Canada region*
	316	*Recognize the natural forces that cause erosion*—**Sample Question 6**
Advanced 315		
310	314	Use map to explain historical shift in center of U.S. population
	309	*Identify purpose of OPEC*
	309	Understand and compare different views on land ownership
	303	*Interpret resource map to determine likely location for large city to develop*
300	301	Use map to help explain two reasons why early civilizations developed in Fertile Crescent
	297	Use atlas to find some information about urbanization
	295	*Identify an economic impact of EL Niño on Peru*
290	291	*Apply concept of interior to locate capital city on political map*
	288	*Use map to determine which countries might have a conflict over resources*
	285	*Recognize why countries join international organizations*—**Sample Question 8**
Proficient 282		
280	283	*Use a political map and a land use map to locate an African city*
	278	*Compare states using rainfall and growing season maps*
	271	Explain one reason for high rate of tropical deforestation
270	270	*Understand how to read a population pyramid*
	267	Use map to explain one reason why early civilizations developed in Fertile Crescent
260	262	*Recognize fault line on a map*
	257	Determine direct or nearly direct route between two points on a transit map—**Sample Question 5**
	256	*Identify Florida as a peninsula*—**Sample Question 7**
250	250	*Locate Lake Superior on map of North America*
Basic 242		
240	240	*Identify city closest to earthquake epicenter on map*
230		
	227	*Use map to identify large U.S. trading partner*
220		
	217	Use resource map to explain where steel industry would develop
210		
	207	Locate home state on map
200		
0		

NOTE: Regular type denotes a constructed-response question. Italic type denotes a multiple-choice question.

* Each grade 8 geography question in the 2001 assessment was mapped onto the NAEP 0–500 geography scale. The position of the question on the scale represents the scale score attained by students who had a 65 percent probability of successfully answering a constructed-response question, or a 74 percent probability of correctly answering a four-option multiple-choice question. Only selected questions are presented. Scale score ranges for geography achievement levels are referenced on the map. For constructed-response questions, the question description represents students' performance at the scoring criteria level being mapped.

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2001 Geography Assessment.

NAEP Geography Scale

Figure 6.3

Grade 12 Item Map

Map of selected item descriptions on the National Assessment of Educational Progress (NAEP) geography scale for grade 12

This map describes the knowledge or skill associated with answering individual geography questions. The map identifies the score point at which students had a high probability of successfully answering the question.*

500

380

377 Use data and maps to explain Mongolia's economic development

370

360

350

350 Explain reasons for international trade in oil
347 Explain differences between two countries using population pyramids—**Sample Question 13**

Advanced

340

345 Use atlas to explain regional variations in land use

339

337 Use map to explain historical shift in center of U.S. population
333 *Use map to explain economic impact of Mid-East War*

330

331 Use multiple maps to describe regions where most Australians live
325 Explain high rate of tropical deforestation

320

321 *Use map and charts to compare urbanization in two European countries*
319 *Use a time zone map*
318 *Identify most widely-practiced religion in India*—**Sample Question 11**

310

314 Identify oil as product depicted on map of international trade
311 *Use climate map to locate countries in tropical zone*

Proficient

305

305 *Use map and charts to identify source of forest products for Japan*
301 *Identify purpose of OPEC*

300

300 Explain reasons why Fertile Crescent was home to early civilizations—**Sample Question 12**
299 *Use multiple maps to determine U.S. region with highest population density*

290

295 *Use map to explain geographic distribution of languages*
287 *Identify an economic impact of El Niño on Peru*
284 *Define the characteristic of a region*

280

282 Locate natural hazards on map and explain their impact
280 *Use map and data to evaluate an environmental threat*
276 Explain siting of cities

Basic

270

272 *Recognize how to read a flow map*—**Sample Question 10**

270

271 *Read a population pyramid*
267 Draw partially accurate map based on written description

260

258 *Identify an area of flat land on contour map*

250

253 *Recognize that Richter scale is used for measuring earthquake intensity*

240

242 *Use map to locate area likely to suffer earthquake damage*

0

NOTE: Regular type denotes a constructed-response question. Italic type denotes a multiple-choice question.

* Each grade 12 geography question in the 2001 assessment was mapped onto the NAEP 0–500 geography scale. The position of the question on the scale represents the scale score attained by students who had a 65 percent probability of successfully answering a constructed-response question, or a 74 percent probability of correctly answering a four-option multiple-choice question. Only selected questions are presented. Scale score ranges for geography achievement levels are referenced on the map. For constructed-response questions, the question description represents students' performance at the scoring criteria level being mapped.

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2001 Geography Assessment.

A

Appendix A
Overview of Procedures Used for the NAEP 2001 Geography Assessment

Appendix Contents

The Assessment

The Samples

Students with Disabilities (SD) and Limited English Proficient (LEP) Students

Data Collection

Data Analysis

NAEP Reporting Groups

Cautions in Interpretations

This appendix provides an overview of the NAEP 2001 geography assessment's primary components—framework, development, administration, scoring, and analysis. A more extensive review of the procedures and methods used in the geography assessment will be included in the forthcoming *NAEP 2001 Technical Report*.

The NAEP 2001 Geography Assessment

Appendix Focus

Technical aspects of the NAEP 2001 geography assessment

The National Assessment Governing Board (NAGB), created by Congress in 1988, is responsible for formulating policy for NAEP. The NAGB is specifically charged with developing assessment objectives and test specifications through a national consensus approach. That consensus approach results in the development of an assessment framework. The design of the NAEP 2001 geography assessment followed the guidelines provided in the framework developed for the 1994 assessment.[1]

The framework underlying both the NAEP 1994 and 2001 assessments reflects consensus among educators and researchers about the study of geography. Its purpose is to present a comprehensive overview of the most essential outcomes of students' geography education. Developing this framework and the specifications that guided development of the assessment involved the critical input of hundreds of individuals across the country, including representatives of national education organizations, teachers, parents, policymakers, business leaders, and the interested general public. This consensus process was managed by the Council of Chief State School Officers for NAGB.

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[1] National Assessment Governing Board (1994). *Geography framework for the 1994 and 2001 National Assessment of Educational Progress.* Washington, DC: Author.

The assessment framework specified not only the particular content areas of geography to be measured (see chapter 1 for a description of these dimensions), but also the percentage of assessment questions that should be devoted to each. The target percentage distribution of content areas, as specified in the framework, along with the actual percentage distributions in the 1994 and 2001 assessments, are presented in table A.1. The targeted content mix of 40 percent Space and Place, 30 percent Environment and Society, and 30 percent Spatial Dynamics and Connections was held constant across all three grades. The actual content of the assessment in terms of percentage of time spent by students was generally within a few percentage points of the targeted distribution in both assessment years. Such variation across years in item classification distribution does not affect the reporting of trends in student performance. Trend reporting is based upon the underlying scale, which uses the common items (i.e., those used in both assessment years), but maintains its stability even if some items are dropped or replaced. Moreover, the weighting of subscales in deriving the composite scale is based on the target item classification distribution.

The Assessment Design

Each student who participated in the geography assessment received a booklet containing three or four sections: a set of general background questions, a set of subject-specific background questions dealing largely with the student's use of technology, and one or two sets, or "blocks," of cognitive questions assessing knowledge and skills in geography as outlined in the framework. At grades 8 and 12, students were given either two 25-minute blocks or one 50-minute block. At grade 4, however, only 25-minute blocks were used. At each grade, one of the 25-minute blocks of questions required the use of an atlas, which was provided.

Table A.1 Distribution of Questions

Target and actual percentage distribution of questions by grade and geography content area, grades 4, 8, and 12: 1994 and 2001

	Grade 4			Grade 8			Grade 12		
Content Areas	Target	Actual 1994	Actual 2001	Target	Actual 1994	Actual 2001	Target	Actual 1994	Actual 2001
Space and Place	40	42	48	40	39	40	40	42	38
Environment and Society	30	28	24	30	30	32	30	30	35
Spatial Dynamics and Connections	30	31	28	30	32	28	30	29	27

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and 2001 Geography Assessments.

Table A.2 Distribution of Questions by Question Type

Distribution of questions administered by question type, grades 4, 8, and 12: 1994 and 2001

	Grade 4		Grade 8		Grade 12	
	1994	2001	1994	2001	1994	2001
Multiple-choice	59	63	84	85	85	86
Short constructed-response	23	21	32	30	25	24
Extended constructed-response	8	7	9	9	13	13
Total	90	91	125	124	123	123

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and 2001 Geography Assessments.

At grade 4, a total of six 25-minute blocks of cognitive questions were given, while at grades 8 and 12, seven blocks (six 25-minute blocks and one 50-minute block) were administered.[2] Some of the blocks at each grade (three at grade 4, and four at grades 8 and 12) were carried forward from the 1994 assessment to the 2001 assessment to allow for the measurement of changes across time. Each block consisted of both multiple-choice and constructed-response questions. Short-constructed-response questions required a few sentences for an answer, while extended-constructed-response questions generally required a paragraph or more. Some of the constructed-response questions required students to create maps or graphics. It was expected that students could adequately answer the short-constructed-response questions in about two to three minutes and the extended-constructed-response questions in about five minutes. The 50-minute blocks contained questions focusing on a particular theme, and included two extended-constructed-response questions. Only one 50-minute block was administered at each of grades 8 and 12.

Table A.2 displays the number of questions by type and by grade level for the 1994 and 2001 assessments. Some of the questions were used at more than one grade level; thus, the sum of the questions that appears at each grade level is greater than the total number of unique questions. The total number of questions at each grade level varied little from 1994 to 2001, despite the release to the public of several blocks at each grade level and attendant replacement with new blocks of questions. It should be noted that any such variation across years does not affect NAEP's ability to report on changes in students' performance across years because this reporting is based on the presence of blocks that were common to the assessment in two years.

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[2] These blocks were distributed across the student booklets in a Balanced Incomplete Block (BIB) design that is described later in this section.

The assessment design allowed for maximum coverage of geography content at grades 4, 8, and 12, while minimizing the time burden for any one student. This was accomplished through the use of matrix sampling of cognitive questions, in which representative samples of students took different portions of the entire pool of assessment questions. The aggregate results across the entire assessment allowed for broad reporting of the geography performance of the targeted population. Matrix sampling did not apply to background questions; each student received all the background questions appropriate for his or her grade.

In addition to matrix sampling, the assessment design utilized a procedure for distributing test booklets that controlled for position and context effects. Students received different blocks of questions in their booklets according to a procedure called "Balanced Incomplete Block (BIB) spiraling." This procedure assigns blocks of questions so that every block appears in the first or second position within a booklet an equal number of times. Every block of questions is paired with every other block, with the exception of the 50-minute theme block, which appears on its own without another block of cognitive questions. The spiraling aspect of this procedure cycles the booklets for administration, so that typically only a few students in any assessment session receive the same booklet. This design allows for some balancing of the impact of context and fatigue effects to be measured and reported, but makes allowance for the difficulties of administering the 50-minute blocks.[3]

In addition to the student assessment booklets, three other instruments provided data relating to the assessment: a teacher questionnaire, a school questionnaire, and a Students with Disabilities and/or Limited English Proficiency (SD and/or LEP) questionnaire. The teacher questionnaire was administered to the geography or social studies teachers of fourth- and eighth-grade students participating in the assessment. The questionnaire consisted of three sections and took approximately 20 minutes to complete. The first section focused on the teacher's general background and experience; the second section on computer resources available in the school; and the third section on classroom information about geography/social studies instruction.

The school characteristics and policy questionnaire was given to the principal or other administrator in each participating school and took about 20 minutes to complete. The questions asked about school policies, programs, facilities, and demographic composition and background of the student body.

The SD and/or LEP student questionnaire was completed by a school staff member knowledgeable about those students who were selected to participate in the assessment and who were identified as: 1) having an Individualized Education Program (IEP) or equivalent program (for reasons other than being gifted and talented) or 2) being limited English proficient (LEP). A questionnaire was completed for each SD and/or LEP student sampled regardless of whether the student participated in the assessment. Each questionnaire took approximately 3 minutes to complete and asked about the student and the special programs in which he or she participated.

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[3] For further details on the booklet design, see the forthcoming *NAEP 2001 Technical Report.*

National Sample

The national results presented in this report are based on nationally representative probability samples of fourth-, eighth-, and twelfth-grade students. The sample was chosen using a multistage design that involved sampling students from selected schools within selected geographic areas across the country. The sample design had the following stages:

1) selection of geographic areas (a county, group of counties, or metropolitan statistical area);
2) selection of schools (public and nonpublic) within the selected areas; and
3) selection of students within selected schools.

Each selected school that participated in the assessment and each student assessed represents a portion of the population of interest. Sampling weights are needed to make valid inferences between the student samples and the respective populations from which they were drawn. Sampling weights account for disproportionate representation due to the oversampling of students who attend schools with high concentrations of Black and/or Hispanic students and students who attend nonpublic schools. Among other uses, sampling weights also account for lower sampling rates for very small schools and are used to adjust for school and student nonresponse.[4]

Unlike the 1994 national assessment, a special feature of the 2001 national assessment was the collection of data from samples of students where assessment accommodations for special-needs students were not permitted and from samples of students where accommodations for special-needs students were permitted. NAEP inclusion rules were applied, and accommodations were offered only when a student had an Individualized Education Program (IEP) because of a disability and/or was identified as being a limited English proficient student (LEP); all other students were asked to participate in the assessment under standard conditions.

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[4] Additional details regarding the design and structure of the national and state samples will be included in the forthcoming *NAEP 2001 Technical Report*. In addition, the reader may consult the *NAEP 2000 Technical Report* for a discussion of sampling procedures that are mostly common to all NAEP assessments.

Table A.3 National Student Sample Size

National student sample size by type of results, grades 4, 8, and 12: 1994 and 2001

	1994	2001	
	Accommodations not permitted sample	Accommodations not permitted sample	Accommodations permitted sample
Grade 4			
Non SD/LEP students assessed	5,045	6,375	
SD/LEP students assessed without accommodations	462	551	476
SD/LEP students assessed with accommodations	NA	NA	368
Total students assessed	5,507	6,926	7,219
Grade 8			
Non SD/LEP students assessed	6,482	8,227	
SD/LEP students assessed without accommodations	396	721	675
SD/LEP students assessed with accommodations	NA	NA	397
Total students assessed	6,878	8,948	9,299
Grade 12			
Non SD/LEP students assessed	5,944	8,477	
SD/LEP students assessed without accommodations	290	522	467
SD/LEP students assessed with accommodations	NA	NA	188
Total students assessed	6,234	8,999	9,132

SD = Students with Disabilities.

LEP = Limited English Proficient students.

NA = Not applicable. No accommodations were permitted in this sample.

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and 2001 Geography Assessments.

Table A.3 shows the number of students included in the national samples for the NAEP 1994 and 2001 geography assessments at each grade level. For the 2001 assessment, the table includes the number of students in the sample where accommodations were not permitted and the number of students in the sample where accommodations were permitted. The table shows that the same non-SD and/or LEP students were included in both samples in 2001; only the SD and/or LEP students differed between the two samples. The 1994 design differed somewhat in that the SD and/or LEP students were assessed in standard conditions and accommodations were not permitted.

Table A.4 provides a summary of the national school and student participation rates for the geography assessment samples where accommodations were not permitted and where accommodations were

Table A.4 Participation Rates

National school and student participation rates for public schools, nonpublic schools, and public and nonpublic schools combined, grades 4, 8, and 12: 2001

	Weighted school participation			Samples where accommodations were not permitted				Samples where accommodations were permitted			
				Student participation		Overall participation rate		Student participation		Overall participation rate	
	Percentage before substitution	Percentage after substitution	Total number of schools	Weighted percentage student participation	Total number of students assessed	Before substitution	After substitution	Weighted percentage student participation	Total number of students assessed	Before substitution	After substitution
Grade 4											
Public	83	88	276	95	5,895	79	84	95	6,181	79	84
Nonpublic	83	91	89	96	1,031	80	87	96	1,038	80	88
Combined	83	88	365	95	6,926	79	84	95	7,219	79	84
Grade 8											
Public	79	87	259	92	7,728	73	80	92	8,063	72	80
Nonpublic	84	88	110	96	1,232	81	84	96	1,245	80	84
Combined	79	87	369	93	8,960	74	81	92	9,308	73	80
Grade 12											
Public	73	80	311	76	7,977	55	61	76	8,112	55	61
Nonpublic	67	77	63	98	1,022	66	76	91	1,021	61	70
Combined	72	80	374	77	8,999	56	62	77	9,133	56	62

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2001 Geography Assessment.

permitted. Participation rates are presented for public and nonpublic schools, individually and combined. The first rate is the weighted percentage of schools participating in the assessment before substitution of demographically similar schools.[5] This rate is based only on the number of schools that were initially selected for the assessment. The numerator of this rate is the sum of the number of students represented by each initially selected school that participated in the assessment. The denominator is the sum of the number of students represented by each of the initially selected schools that had eligible students enrolled.

The second school participation rate is the weighted participation rate after substitution. The numerator of this rate is the sum of the number of students represented by each of the participating schools, whether originally selected or selected as a substitute for a school that chose not to participate. The denominator is the same as that for the weighted participation rate for the initial sample. Because of the common denominators, the weighted participation rate after substitution is at least as great as the weighted participation rate before substitution.

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[5] The initial base sampling weights were used in weighting the percentages of participating schools and students. An attempt was made to preselect (before field processes began) a maximum of two substitute schools for each sampled public school (one in-district and one out-of-district) and each sampled Catholic school, and one for each sampled nonpublic school (other than Catholic). To minimize bias, a substitute school resembled the original selection as much as possible on affiliation, estimated number of grade-eligible students, and minority composition.

Also presented in table A.4 are weighted student participation rates. The numerator of this rate is the sum across all students assessed (in either an initial session or a makeup session) of the number of students that each represents. The denominator of this rate is the sum across all eligible sampled students in participating schools of the number of students that each represents. The overall participation rates take into account the weighted percentage of school participation before or after substitution and the weighted percentage of student participation after makeup sessions.

For the grade 12 national sample, where school and student response rates did not meet NCES standards, an extensive analysis was conducted that examined, among other factors, the potential for nonresponse bias at both the school and student level. No evidence of any significant potential for either school or student nonresponse bias was found. Results of these analyses, as well as nonresponse bias analyses for the grade 4 and grade 8 national samples, will be included in the forthcoming *NAEP 2001 Technical Report.*

Students with Disabilities (SD) and/or Limited English Proficient (LEP) Students

It is NAEP's intent to assess all selected students from the target population. Therefore, every effort is made to ensure that all selected students who are capable of participating in the assessment are assessed. Some students sampled for participation in NAEP can be excluded from the sample according to carefully defined criteria. These criteria were revised in 1996 to communicate more clearly a presumption of inclusion except under special circumstances. According to these criteria, students with Individualized Education Programs (IEPs) were to be included in the NAEP assessment except in the following cases:

1) The school's IEP team determined that the student could not participate, OR,
2) The student's cognitive functioning was so severely impaired that she or he could not participate, OR,
3) The student's IEP required that the student had to be tested with an accommodation or adaptation and that the student could not demonstrate his or her knowledge without that accommodation.[6]

All LEP students receiving academic instruction in English for three years or more were to be included in the assessment. Those LEP students receiving instruction in English for fewer than three years were to be included unless school staff judged them to be incapable of participating in the assessment in English.

Participation of SD and/or LEP Students in the NAEP Samples

Testing all sampled students is the best way for NAEP to ensure that the statistics generated by the assessment are as representative as possible of the performance of the entire national population and the populations of participating jurisdictions. However, all groups of students include certain proportions that cannot be tested in large-scale assessments (such as students who have profound mental disabilities), or who can only be tested through the use of "accommodations" such as extra time, one-on-one administration, or use of magnifying equipment.

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[6] As described in the following section, a second sample in the 2001 national assessments was assessed that included students who required and were provided with accommodations.

Some students with disabilities and some LEP students cannot show on a test what they know and can do unless they are provided accommodations. When such accommodations are not allowed, students requiring such adjustments are often excluded from large-scale assessments such as NAEP. This phenomenon has become more common in the last decade and gained momentum with the passage of the Individuals with Disabilities Education Act (IDEA), which led schools and states to identify increasing proportions of students as needing accommodations on assessments to best show what they know and can do.[7] Furthermore, Section 504 of the Rehabilitation Act of 1973 requires that, when students with disabilities are tested, schools must provide them with appropriate accommodations so that the test results accurately reflect students' achievement.[8] In addition, as the proportion of limited English proficient students in the population has increased, some states have started offering accommodations, such as translated versions of assessments or the use of bilingual dictionaries as part of assessments.

Before 1996, NAEP did not allow any testing under nonstandard conditions (i.e., accommodations were not permitted). At that time, NAEP samples were able to include almost all sampled students in "standard" assessment sessions. However, as the influence of IDEA grew more widespread, the failure to provide accommodations led to increasing levels of exclusion in the assessment. Such increases posed two threats to the program: 1) they threatened the stability of trend lines (because excluding more students in one year than the next might lead to apparent rather than real gains), and 2) they made NAEP samples less than optimally representative of target populations.

NAEP reacted to this challenge by adopting a multipart strategy. It became clear that, to ensure that NAEP samples were as inclusive as possible, the program had to move toward allowing the same assessment accommodations that were afforded students in state and district testing programs. However, allowing accommodations represents a change in testing conditions that may affect measurement of changes over time. Therefore, beginning with the 1996 national assessments and the 1998 state assessments, NAEP has assessed a series of parallel samples of students. In one set of samples, testing accommodations were not permitted; this has allowed NAEP to maintain the measurement of achievement trends. In addition to the samples where accommodations were not permitted, parallel samples in which accommodations were permitted were also assessed. By having two overlapping samples and two sets of related data points, NAEP could meet two core program goals.[9] First, data trends could be maintained. Second, parallel trend lines could be set in ways that ensure that in future years the program will be able to use the most inclusive practices possible and mirror the procedures used by most state and district assessments. Beginning in 2002, NAEP will use only the more inclusive samples in which assessment accommodations are permitted.

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[7] Office of Special Education Programs (1997). *Nineteenth annual report to Congress on the implementation of the individuals with disabilities education act.* Washington, DC: U. S. Department of Education.

[8] Section 504 of the Rehabilitation Act of 1973 is a civil rights law designed to prohibit discrimination on the basis of disability in programs and activities, including education, that receive federal financial assistance.

In geography, national data from 1994 and 2001 are reported for the sample in which accommodations were not permitted. National data for the second sample, in which accommodations were permitted, are reported at all grades for 2001 only.

In order to make it possible to evaluate the impact of increasing exclusion rates, data on exclusion in both assessment years are included in this appendix. Since the exclusion rates may affect average scale scores, readers should consider the magnitude of exclusion rate changes when interpreting score changes.

Percentages of SD and/or LEP students for the national sample where accommodations were not permitted are presented in table A.5. The data in this table include the percentages of students *identified* as SD and/or LEP, the percentage of students *excluded*, and the percentage of *assessed* SD and/or LEP students. Percentages of these students in the national sample where accommodations were permitted are presented in table A.6. The data in this table include the percentages of students *identified* as SD and/or LEP, the percentage of students *excluded*, the percentage of *assessed* SD and/or LEP students, the percentage *assessed without accommodations*, and the percentage *assessed with accommodations*.

In the 2001 accommodations-not-permitted national sample, 8 percent of students at grades 4 and 8, and 5 percent of students at grade 12 were excluded from the assessment. The comparable percentages in the 2001 accommodations-permitted national sample were 4 percent at grades 4 and 8, and 2 percent at grade 12.

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[9] The two samples are described as "overlapping" because in 2001 the same group of non-SD and/or LEP students were included in both samples.

Table A.5 Students Identified as SD and/or LEP Where Accommodations Were Not Permitted

Percentage of students identified as SD and/or LEP where accommodations were not permitted, grades 4, 8, and 12: 1994 and 2001

	1994			2001		
	Number of students sampled	Weighted percentage of all students	Weighted percentage of students identified	Number of students sampled	Weighted percentage of all students	Weighted percentage of students identified
Grade 4						
SD and/or LEP students						
Identified	1,487	14	100	1,051	16	100
Excluded	1,025	5	41	500	8	48
Assessed	462	8	59	551	8	52
SD students only						
Identified	974	10	100	611	11	100
Excluded	685	4	43	378	6	58
Assessed	289	6	57	733	4	42
LEP students only						
Identified	546	4	100	489	6	100
Excluded	368	1	35	157	2	32
Assessed	178	3	65	332	4	68
Grade 8						
SD and/or LEP students						
Identified	1,674	10	100	1,379	16	100
Excluded	1,278	5	46	658	8	48
Assessed	396	5	54	721	8	52
SD students only						
Identified	1,254	8	100	947	12	100
Excluded	979	4	49	546	7	54
Assessed	275	4	51	401	6	46
LEP students only						
Identified	450	2	100	489	4	100
Excluded	323	1	38	153	1	31
Assessed	127	1	62	336	3	69
Grade 12						
SD and/or LEP students						
Identified	1,238	8	100	1,096	11	100
Excluded	948	3	43	574	5	44
Assessed	290	4	57	522	6	56
SD students only						
Identified	967	6	100	772	8	100
Excluded	776	3	47	483	4	49
Assessed	191	3	53	289	4	51
LEP students only						
Identified	285	2	100	373	3	100
Excluded	184	#	29	121	1	31
Assessed	101	1	71	252	2	69

# Percentage is between 0.0 and 0.5.

SD = Students with Disabilities. LEP = Limited English Proficient students.

NOTE: Within each grade level, the combined SD/LEP portion of the table is not a sum of the separate SD and LEP portions because some students were identified as both SD and LEP. Such students would be counted separately in the bottom portions, but counted only once in the top portion.
Within each portion of the table, percentages may not sum properly due to rounding. In 1994, the geography assessment was conducted at the same time as the 1994 U.S. history assessment. The identification and exclusion of special-needs students occurred after they were sampled, but before they could be assigned either a history or geography session. As a consequence, the 1994 sample sizes for identified and excluded students appear larger than would be expected given the weighted percentages that were calculations based on the geography sample only.

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and 2001 Geography Assessments.

Table A.6 Students Identified as SD and/or LEP Where Accommodations Were Permitted

Percentage of students identified as SD and/or LEP where accommodations were permitted, grades 4, 8, and 12: 2001

		Number of students sampled	Weighted percentage of all students	Weighted percentage of students identified
Grade 4				
SD and/or LEP students	Identified	1,137	17	100
	Excluded	293	4	24
	Assessed	844	13	76
	Assessed without accommodations	476	6	36
	Assessed with accommodations	368	7	41
SD students only	Identified	641	13	100
	Excluded	138	3	21
	Assessed	503	10	79
	Assessed without accommodations	172	3	26
	Assessed with accommodations	331	7	53
LEP students only	Identified	576	5	100
	Excluded	175	2	31
	Assessed	401	4	69
	Assessed without accommodations	309	3	54
	Assessed with accommodations	92	1	16
Grade 8				
SD and/or LEP students	Identified	1,453	16	100
	Excluded	381	4	23
	Assessed	1,072	12	77
	Assessed without accommodations	675	7	43
	Assessed with accommodations	397	5	34
SD students only	Identified	996	12	100
	Excluded	262	3	22
	Assessed	734	10	78
	Assessed without accommodations	344	4	35
	Assessed with accommodations	390	5	43
LEP students only	Identified	545	4	100
	Excluded	140	1	27
	Assessed	405	3	73
	Assessed without accommodations	348	3	63
	Assessed with accommodations	57	#	10
Grade 12				
SD and/or LEP students	Identified	956	10	100
	Excluded	301	2	23
	Assessed	655	8	77
	Assessed without accommodations	467	5	50
	Assessed with accommodations	188	3	27
SD students only	Identified	652	8	100
	Excluded	252	2	26
	Assessed	400	6	74
	Assessed without accommodations	233	3	42
	Assessed with accommodations	167	3	32
LEP students only	Identified	334	2	100
	Excluded	63	#	17
	Assessed	271	2	83
	Assessed without accommodations	242	2	75
	Assessed with accommodations	29	#	8

Percentage is between 0.0 and 0.5.

SD = Students with Disabilities. LEP = Limited English Proficient students.

NOTE: Within each grade level, the combined SD/LEP portion of the table is not a sum of the separate SD and LEP portions because some students were identified as both SD and LEP. Such students would be counted separately in the bottom portions, but counted only once in the top portion.

Within each portion of the table, percentages may not sum properly due to rounding.

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2001 Geography Assessment.

Investigating the Effects of Exclusion Rates on Assessment Results

As indicated by the data in the previous section, exclusion rates have tended to increase across assessment years in the samples that did not permit accommodations. In considering the effects of exclusion rates on assessment results, at least one major issue becomes evident. If exclusion rates vary substantially across assessment years, then the ability to report trends (i.e., compare results between years) may be affected by the fact that the results from different years are based on different proportions of the population.

NCES has funded research into ways in which excluded students might be included in the estimation of scores for total populations and has also commissioned studies of the impact of assessment accommodations on overall scores. Several statistical adjustment approaches for estimating full populations (including estimates for excluded students) have been proposed, but none has yet been judged ready for operational use. Regarding the impact of assessment accommodations on overall scores, ETS has conducted differential item functioning (DIF) studies of items assessed with accommodations in the 1996 assessment.[10] In these studies, ETS researchers found little evidence that accommodations changed the functioning of test questions.

Types of Accommodations Permitted

Table A.7 displays the number and the percentages of SD and/or LEP students assessed with the variety of available accommodations. It should be noted that students assessed with accommodations typically received some combination of accommodations. The numbers and percentages presented in the table reflect only the primary accommodation provided. For example, students assessed in small groups (as compared to standard NAEP sessions of about 30 students) usually received extended time. In one-on-one administrations, students often received assistance in recording answers and were afforded extra time. Extended time was considered the primary accommodation only when it was the sole accommodation provided.

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[10] For information on DIF studies of items assessed with accommodations in the 1996 mathematics and science assessments, see Mazzeo, J. M., Carlson, J. E., Voelkl, K. E., & Lutkus, A. D. (1999). *Increasing the participation of special needs students in NAEP; A report on 1996 NAEP research activities.* Washington, DC: National Center for Education Statistics.

Table A.7 Students Identified as SD and/or LEP by Type of Accommodation

Percentage of students identified as SD and/or LEP by type of accommodation where accommodations were permitted, grades 4, 8, and 12: 2001

	Grade 4			Grade 8			Grade 12		
	Number of students sampled	Weighted percentage of all students	Weighted percentage of students identified	Number of students sampled	Weighted percentage of all students	Weighted percentage of students identified	Number of students sampled	Weighted percentage of all students	Weighted percentage of students identified
SD and/or LEP students									
Bilingual dictionary	41	0.38	2.2	6	0.04	0.3	21	0.14	1.4
Large-print book	3	0.02	0.1	3	0.02	0.2	3	0.05	0.5
Extended time	40	0.59	3.4	70	0.82	5.1	68	0.86	8.6
Read aloud	15	0.27	1.5	14	0.15	0.9	10	0.13	1.3
Small group	230	4.97	28.6	286	4.02	25.1	83	1.43	14.4
One-on-one	27	0.50	2.9	6	0.09	0.6	3	0.03	0.4
Scribe/computer	10	0.31	1.8	3	0.08	0.5	0	0.00	0.0
Other	2	0.03	0.2	9	0.16	1.0	0	0.00	0.0
SD students only									
Bilingual dictionary	5	0.05	0.4	0	0.00	0.0	0	0.00	0.0
Large-print book	3	0.02	0.2	3	0.02	0.2	3	0.05	0.6
Extended time	40	0.59	4.7	70	0.82	6.6	68	0.86	11.1
Read aloud	15	0.27	2.1	14	0.15	1.2	10	0.13	1.7
Small group	230	4.97	39.3	286	4.02	32.4	83	1.43	18.5
One-on-one	27	0.50	3.9	6	0.09	0.7	3	0.03	0.5
Scribe/computer	10	0.31	2.5	3	0.08	0.7	0	0.00	0.0
Other	1	0.02	0.2	8	0.15	1.2	0	0.00	0.0
LEP students only									
Bilingual dictionary	41	0.38	6.9	6	0.04	1.0	21	0.14	5.7
Large-print book	0	0.00	0.0	0	0.00	0.0	0	0.00	0.0
Extended time	20	0.20	3.6	20	0.13	3.0	4	0.02	0.9
Read aloud	5	0.04	0.7	0	0.00	0.0	0	0.00	0.0
Small group	21	0.21	3.8	30	0.27	6.1	4	0.04	1.7
One-on-one	3	0.03	0.5	0	0.00	0.0	0	0.00	0.0
Scribe/computer	1	0.01	0.2	0	0.00	0.0	0	0.00	0.0
Other	1	0.01	0.1	1	0.01	0.3	0	0.00	0.0

SD = Students with Disabilities. LEP = Limited English Proficient students.
NOTE: The combined SD/LEP portion of the table is not a sum of the separate SD and LEP portions because some students were identified as both SD and LEP. Such students would be counted separately in the bottom portions, but counted only once in the top portion.
SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2001 Geography Assessment.

Data Collection and Scoring

The 2001 geography assessment was conducted from January through March 2001, with some makeup sessions in early April. As with all NAEP assessments, data collection for the 2001 assessment was conducted by a trained field staff. This was accomplished by staff from Westat, Inc.

Materials from the 2001 assessment were shipped to NCS Pearson, where trained staff evaluated the responses to the constructed-response questions using scoring rubrics or guides prepared by ETS. Each constructed-response question had a unique scoring rubric that defined the criteria used to evaluate students' responses. The extended-constructed-response questions were evaluated with four-level rubrics, and almost all of the short-constructed-response questions were rated according to three-level rubrics that permitted partial credit. Other short-constructed-response questions were scored as either acceptable or unacceptable.

For the 2001 geography assessment, approximately 303,000 constructed responses were scored. This number includes rescoring to monitor inter-rater reliability. The within-year average percentage of agreement for the 2001 national reliability sample was 95 percent at grade 4, 94 percent at grade 8, and 93 percent at grade 12.

Data Analysis and IRT Scaling

Subsequent to the professional scoring, all information was transcribed to the NAEP database at ETS. Each processing activity was conducted with rigorous quality control. After the assessment information was compiled in the database, the data were weighted according to the population structure. The weighting for the national sample reflected the probability of selection for each student as a result of the sampling design, adjusted for nonresponse. Through post-stratification, the weighting assured that the representation of certain subpopulations corresponded to figures from the U.S. Census and the Current Population Survey.[11]

Analyses were then conducted to determine the percentages of students who gave various responses to each cognitive and background question. In determining these percentages for the cognitive questions, a distinction was made between missing responses at the end of a block (i.e., missing responses subsequent to the last question the student answered) and missing responses prior to the last observed response. Missing responses before the last observed response were considered intentional omissions. In analysis, omitted responses to multiple-choice items were scored as fractionally correct.[12] For constructed-response items, omitted responses were placed into the lowest score category. Missing responses at the end of the block were considered "not reached" and treated as if the questions had not been presented to the student. In calculating response percentages for each question, only students classified as having been presented the question were included in the denominator of the statistic.

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[11] These procedures are described more fully in the "Weighting and Variance Estimation" section later in this document. For additional information about the use of weighting procedures, see the forthcoming *NAEP 2001 Technical Report*. In addition, the reader may consult the *NAEP 2000 Technical Report* for a discussion of weighting procedures that are common to all NAEP assessments.

[12] Lord, F. M. (1980). *Applications of item response theory to practical testing problems.* Hillsdale, NJ: Lawrence Erlbaum Associates.

It is standard NAEP practice to treat all nonrespondents to the last question in a block as if they had not reached the question. For multiple-choice and short-constructed-response questions, this practice produces a reasonable pattern of results in that the proportion reaching the last question is not dramatically smaller than the proportion reaching the next-to-last question. However, for geography blocks that ended with extended-constructed-response questions, the standard practice could result in extremely large drops in the proportion of students attempting some of the final questions. Therefore, for blocks ending with an extended-constructed-response question, students who answered the next-to-last question but did not respond to the extended-constructed-response question were classified as having intentionally omitted the last question.

Item Response Theory (IRT) was used to estimate average geography scale scores for the nation and for various subgroups of interest within the nation. IRT models the probability of answering a question in a certain way as a mathematical function of proficiency or skill. The main purpose of IRT analysis is to provide a common scale on which performance can be compared across groups such as those defined by characteristics, including gender and race/ethnicity.

In producing the geography scales, three distinct IRT models were used. Multiple-choice questions were scaled using the three-parameter logistic (3PL) model; short-constructed-response questions rated as acceptable or unacceptable were scaled using the two-parameter logistic (2PL) model; and short-constructed-response questions rated according to a three-level rubric, as well as extended-constructed-response questions rated on a four-level rubric, were scaled using a Generalized Partial-Credit (GPC) model.[13] Developed by ETS and first used in 1992, the GPC model permits the scaling of questions scored according to multipoint rating schemes. The model takes full advantage of the information available from each of the student response categories used for these more complex constructed-response questions.[14]

The geography scale is composed of three types of questions: multiple-choice, short-constructed-response (scored either dichotomously or allowing for partial credit), and extended-constructed-response (scored according to a partial-credit model). Unfortunately, the question of how much information different question-types contribute to the geography scale has no simple answer. The information provided by a given question is determined by the

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[13] Muraki, E. (1992). A generalized partial credit model: Application of an EM algorithm. *Applied Psychological Measurement*, (*16*)2, 159–176.

[14] More detailed information regarding the IRT analyses used in NAEP assessments will be provided in the forthcoming *NAEP 2001 Technical Report*. In addition, the reader may consult the *NAEP 2000 Technical Report* for a discussion of analysis procedures that are common to all NAEP assessments.

IRT model used to scale the question. It is a function of the item parameters and varies by level of geography proficiency.[15] Thus, the answer to the query "How much information do the different types of questions provide?" will differ for each level of geography performance. When considering the composite geography scale, the answer is even more complicated. The geography data are scaled separately by the three themes (space and place; environment and society; and, spatial dynamics and connections), resulting in three separate subscales at each grade. The composite scale is a weighted combination of these subscales. IRT information functions are only strictly comparable when the item parameters are estimated together. Because the composite scale is based on three separate estimation runs, there is no direct way to compare the information provided by the questions on the composite scale.

Because of the BIB-spiraling design used by NAEP, students do not receive enough questions about a specific topic to provide reliable information about individual performance. (For more information on BIB-spiraling, see "The Assessment Design" section presented earlier in this appendix.) Traditional test scores for individual students, even those based on IRT, would lead to misleading estimates of population characteristics, such as subgroup means and percentages of students at or above a certain scale-score level. Consequently, NAEP constructs sets of plausible values designed to represent the distribution of performance in the population. A plausible value for an individual is not a scale score for that individual, but may be regarded as a representative value from the distribution of potential scale scores for all students in the population with similar characteristics and identical patterns of item response. Statistics describing performance on the NAEP geography scale are based on the plausible values. Under the assumptions of the scaling models, these population estimates will be consistent, in the sense that the estimates approach the model-based population values as the sample size increases, which would not be the case for population estimates obtained by aggregating optimal estimates of individual performance.[16]

Item Mapping Procedures

The geography performance of fourth-, eighth-, and twelfth-graders can be illustrated by "item maps," which position question or "item" descriptions along the NAEP geography scale at each grade. Each question shown is placed at the point on the scale where questions are likely to be answered successfully by students. The descriptions used on these item maps focus on the geography knowledge or skill needed to answer the question. For multiple-choice questions, the description indicates the knowledge or skill demonstrated by selection of the correct option; for constructed-response questions, the description takes into account the knowledge or skill specified by the different levels of scoring criteria for that question.

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[15] Donoghue, J. R. (1994). An empirical examination of the IRT information of polytomously scored reading items under the generalized partial credit model. *Journal of Educational Measurement*, (31)4, 295–311.

[16] For theoretical and empirical justification of the procedures employed, see Mislevy, R. J. (1988). Randomization-based inferences about latent variables from complex samples. *Psychometrika*, (56)2, 177–196.

For computational details, see the forthcoming *NAEP 2001 Technical Report*.

To map questions to particular points on the NAEP geography scale, a response probability convention was adopted that would divide those who had a higher probability of success from those who had a lower probability. Establishing a response probability convention has an impact on the mapping of the test questions onto the geography scale. A lower boundary convention maps the geography questions at lower points along the scale, and a higher boundary convention maps the same questions at higher points on the scale. The underlying distribution of geography skills in the population does not change, but the choice of a response probability convention does have an impact on the proportion of the student population that is reported as "able to do" the questions on the geography scales.

There is no obvious choice of a point along the probability scale that is clearly superior to any other point. If the convention were set with a boundary at 50 percent, those above the boundary would be more likely to get a question right than get it wrong, while those below the boundary would be more likely to get the question wrong than right. Although this convention has some intuitive appeal, it was rejected on the grounds that having a 50/50 chance of getting the question right shows an insufficient degree of mastery. If the convention were set with a boundary at 80 percent, students above the criterion would have a high probability of success with a question. However, many students below this criterion show some level of geography ability that would be ignored by such a stringent criterion. In particular, those in the range between 50 and 80 percent correct would be more likely to get the question right than wrong, yet would not be in the group described as "able to do" the question.

In a compromise between the 50 percent and the 80 percent conventions, NAEP has adopted two related response probability conventions for all its subjects: 65 percent for constructed-response questions (where guessing is not a factor) and 74 percent for multiple-choice questions (to correct for the possibility of answering correctly by guessing). These probability conventions were established, in part, based on an intuitive judgment that they would provide the best picture of students' geography skills.

Some additional support for the dual conventions adopted by NAEP was provided by Huynh.[17] He examined the IRT information provided by items, according to the IRT model used in scaling NAEP questions. ("Information" is used here in a technical sense. See the forthcoming *NAEP 2001 Technical Report* for details.) Following Bock, Huynh decomposed the item information into that provided by a correct response $[P(q)\ I(q)]$ and that provided by an incorrect response $[(1-P(q))\ I(q)]$.[18] Huynh showed that the item information provided by a correct response to a constructed-response item is maximized at the point along the geography scale at which the probability of a correct response is 0.65 (for multiple-choice items, the information provided by a correct response is maximized at the point at which the probability of getting the item correct is 0.74). It should be noted, however, that maximizing the item information $I(q)$, rather than the information provided by a correct response $[P(q)\ I(q)]$, would imply an item mapping criterion closer to 50 percent.

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[17] Huynh, H. (1994, October). *Some technical aspects of standard setting*. Paper presented at the Joint Conference on Standard Setting for Large-Scale Assessment, Washington, DC.

Results are presented in terms of the composite geography scale. However, the geography assessment was scaled separately for the three themes in geography at grades 4, 8, and 12. The composite scale is a weighted combination of the three subscales for the three themes in geography. To obtain item map information, a procedure developed by Donoghue was used.[19] This method models the relationship between the item response function for the subscale and the subscale structure to derive the relationship between the item score and the composite scale (i.e., an item response function for the composite scale). This item response function is then used to derive the probability used in the mapping.

Weighting and Variance Estimation

A multistage sampling design was used to select the students who were assessed. The properties of a sample selected through such a design could be very different from those of a simple random sample, in which every student in the target population has an equal chance of selection and in which the observations from different sampled students can be considered to be statistically independent of one another. Therefore, the properties of the sample for the data collection design were taken into account during the analysis of the assessment data.

One way that the properties of the sample design were addressed was by using sampling weights to account for the fact that the probabilities of selection were not identical for all students. All population and subpopulation characteristics based on the assessment data were estimated using sampling weights. These weights included adjustments for school and student nonresponse.

Not only must appropriate estimates of population characteristics be derived, but appropriate measures of the degree of uncertainty must be obtained for those statistics. Two components of uncertainty are accounted for in the variability of statistics based on student ability: 1) the uncertainty due to sampling only a relatively small number of students, and 2) the uncertainty due to sampling only a portion of the cognitive domain of interest. The first component accounts for the variability associated with the estimated percentages of students who had certain background characteristics or who answered a certain cognitive question correctly.

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[18] Bock, R. D. (1972). Estimating item parameters and latent ability when responses are scored in two or more latent categories. *Psychometrika*, 37, 29–51.

[19] Donoghue, J. R. (1997, March). *Item mapping to a weighted composite scale.* Paper presented at the annual meeting of the American Educational Research Association, Chicago, IL.

Because NAEP uses multistage sampling procedures, conventional formulas for estimating sampling variability that assume simple random sampling are inappropriate. NAEP uses a jackknife replication procedure to estimate standard errors. The jackknife standard error provides a reasonable measure of uncertainty for any student information that can be observed without error. However, because each student typically responds to only a few questions within any theme of geography, the scale score for any single student would be imprecise. In this case, plausible values methodology can be used to describe the performance of groups and subgroups of students. Multiple plausible values (5) are drawn for each student in order to estimate the variance of the posterior scale score distribution. This component of variability is included in the standard errors of NAEP scale scores.[20]

Typically, when the standard error is based on a small number of students or when the group of students is enrolled in a small number of schools, the amount of uncertainty associated with the estimation of standard errors may be quite large. Estimates of standard errors subject to a large degree of uncertainty are followed by the "!" symbol to indicate that the nature of the sample does not allow accurate determination of the variability of the statistic. In such cases, the standard errors—and any confidence intervals or significance tests involving these standard errors—should be interpreted cautiously. Additional details concerning procedures for identifying such standard errors are discussed in the forthcoming *NAEP 2001 Technical Report.*

Drawing Inferences from the Results

The reported statistics are estimates and are therefore subject to a measure of uncertainty. There are two sources of such uncertainty. First, NAEP uses a sample of students rather than testing all students. Second, all assessments have some amount of uncertainty related to the fact that they cannot ask all questions that might be asked in a content area. The magnitude of this uncertainty is reflected in the standard error of each of the estimates. When the percentages or average scale scores of certain groups are compared, the standard error should be taken into account, and observed similarities or differences should not be relied on solely. Therefore, the comparisons are based on statistical tests that consider the standard errors of those statistics and the magnitude of the difference among the averages or percentages.

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[20] For further details, see Johnson, E. G. & Rust, K. F (1992). Population inferences and variance estimation for NAEP data. *Journal of Educational Statistics*, (17)2, 175–190.

Using confidence intervals based on the standard errors provides a way to take into account the uncertainty associated with sample estimates and to make inferences about the population averages and percentages in a manner that reflects that uncertainty. An estimated sample average scale score plus or minus 1.96 standard errors approximates a 95 percent confidence interval for the corresponding population quantity. This statement means that one can conclude with approximately a 95 percent level of confidence that the average performance of the entire population of interest (e.g., all fourth-grade students in public and nonpublic schools) is within plus or minus 1.96 standard errors of the sample average.

As an example, suppose that the average geography scale score of the students in a particular group was 256 with a standard error of 1.2. An approximate 95 percent confidence interval for the population quantity would be as follows:

$$\text{Average} \pm 1.96 \text{ standard errors}$$
$$256 \pm 1.96 \times 1.2$$
$$256 \pm 2.35$$
$$(253.65, 258.35)$$

Thus, one can conclude with a 95 percent level of confidence that the average scale score for the entire population of students in that group is between 253.65 and 258.35. It should be noted that this example, and the examples in the following sections are illustrative. More precise estimates carried out to one or more decimal places are used in the actual analyses.

Similar confidence intervals can be constructed for percentages, if the percentages are not extremely large or extremely small. Extreme percentages should be interpreted with caution. Adding or subtracting the standard errors associated with extreme percentages could cause the confidence interval to exceed 100 percent or go below 0 percent, resulting in numbers that are not meaningful. The forthcoming *NAEP 2001 Technical Report* will contain a more complete discussion of extreme percentages.

Analyzing Group Differences in Averages and Percentages

Statistical tests determine whether the evidence, based on the data from the groups in the sample, is strong enough to conclude that the averages or percentages are actually different for those groups in the population. If the evidence is strong (i.e., the difference is statistically significant), the report describes the group averages or percentages as being different (e.g., one group performed higher than or lower than another group), regardless of whether the sample averages or percentages appear to be approximately the same.

The reader is cautioned to rely on the results of the statistical tests rather than on the apparent magnitude of the difference between sample averages or percentages when determining whether the sample differences are likely to represent actual differences among the groups in the population.

To determine whether a real difference exists between the average scale scores (or percentages of a certain attribute) for two groups in the population, one needs to obtain an estimate of the degree of uncertainty associated with the difference between the averages (or percentages) of these groups for the sample. This estimate of the degree of uncertainty, called the "standard error of the difference" between the groups, is obtained by taking the square of each group's standard error, summing the squared standard errors, and taking the square root of that sum.

$$\text{Standard Error of the Difference} =$$
$$SE_{A-B} = \sqrt{(SE_A^2 + SE_B^2)}$$

Similar to how the standard error for an individual group average or percentage is used, the standard error of the difference can be used to help determine whether differences among groups in the population are real. The difference between the averages or percentages of the two groups plus or minus two standard errors of the difference represents an approximate 95 percent confidence interval. If the resulting interval includes zero, there is insufficient evidence to claim a real difference between the groups in the population. If the interval does not contain zero, the difference between the groups is statistically significant (different) at the 0.05 level.

As an example of comparing groups, consider the problem of determining whether the average geography scale score of group A is higher than that of group B. Suppose that the sample estimates of the average scale scores and standard errors were as follows:

Group	Average Scale Score	Standard Error
A	218	0.9
B	216	1.1

The difference between the estimates of the average scale scores of groups A and B is two points (218 − 216). The standard error of this difference is

$$\sqrt{(0.9^2 + 1.1^2)} = 1.4$$

Thus, an approximate 95 percent confidence interval for this difference is plus or minus two standard errors of the difference

$$2 \pm 1.96 \times 1.4$$
$$2 \pm 2.74$$
$$(-0.74, 4.74)$$

The value zero is within the confidence interval; therefore, there is insufficient evidence to claim that group A outperformed group B.

Conducting Multiple Tests

The procedures in the previous section and the certainty ascribed to intervals (e.g., a 95 percent confidence interval) are based on statistical theory that assumes that only one confidence interval or test of statistical significance is being performed. However, many different groups are being compared (i.e., multiple sets of confidence intervals are being analyzed). In sets of confidence intervals, statistical theory indicates that the

Table A.8 FDR Comparisons of Average Scale Scores

Example of FDR comparisons of average scale scores for different groups of students

	Previous year		Current year		Previous year and current year			
	Average scale score	Standard error	Average scale score	Standard error	Difference in averages	Standard error of difference	Test statistic	Percent confidence*
Group 1	224	1.3	226	1.0	2.08	1.62	1.29	20
Group 2	187	1.7	193	1.7	6.31	2.36	2.68	1
Group 3	191	2.6	197	1.7	6.63	3.08	2.15	4
Group 4	229	4.4	232	4.6	3.24	6.35	.51	62
Group 5	201	3.4	196	4.7	–5.51	5.81	–.95	35

* The percent confidence is 2(1–F(x)) where F(x) is the cumulative distribution of the t-distribution with the degrees of freedom adjusted to reflect the complexities of the sample design.

certainty associated with the entire set of intervals is less than that attributable to each individual comparison from the set. To hold the significance level for the set of comparisons at a particular level (e.g., 0.05), adjustments (called "multiple comparison procedures"[21]) must be made to the methods described in the previous section. One such procedure, the False Discovery Rate (FDR) procedure[22] was used to control the certainty level.

Unlike the other multiple comparison procedures (e.g., the Bonferroni procedure) that control the familywise error rate (i.e., the probability of making even one false rejection in the set of comparisons), the FDR procedure controls the expected proportion of falsely rejected hypotheses. Furthermore, familywise procedures are considered conservative for large families of comparisons.[23] Therefore, the FDR procedure is more suitable for multiple comparisons in NAEP than other procedures. A detailed description of the FDR procedure appears in the forthcoming *NAEP 2001 Technical Report.*

To illustrate how the FDR procedure is used, consider the comparisons of current and previous years' average geography scale scores for the five groups presented in table A.8. Note that the difference in average scale scores and the standard error of the difference are calculated in a way comparable with that of the example in the previous section. The test statistic shown is the difference in average scale scores divided by the standard error of the difference.

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[21] Miller, R. G. (1966). *Simultaneous statistical inference.* New York: Wiley.

[22] Benjamini, Y. & Hochberg, Y. (1995). Controlling the false discovery rate: A practical and powerful approach to multiple testing. *Journal of the Royal Statistical Society, Series B, No. 1.*, pp 289–300.

[23] Williams, V. S. L., Jones, L. V., & Tukey, J. W. (1999). *Controlling error in multiple comparisons with examples from state-to-state differences in educational achievement.* Journal of Educational and Behavioral Statistics, *24*(1), 42–69.

The difference in average scale scores and its standard error can be used to find an approximate 95 percent confidence interval as in the example in the previous section or they can be used to identify a confidence percentage. In the example in the previous section, because an approximate 95 percent confidence interval was desired, the number 1.96 was used to multiply the standard error of the difference to create the approximate confidence interval. In the current example, the confidence interval for the test statistics is identified from statistical tables. Instead of checking to see if zero is within the 95 percent confidence interval about the mean, the significance level from the statistical tables can be directly compared to $100-95 = 5$ percent.

If the comparison of average scale scores across two years were made for only one of the five groups, there would be a significant difference between the average scale scores for the two years if the significance level were less than 5 percent. However, because we are interested in the difference in average scale scores across the two years for all five of the groups, comparing each of the significance levels to 5 percent is not adequate. Groups of students defined by shared characteristics, such as race/ethnicity groups, are treated as sets or families when making comparisons. However, comparisons of average scale scores for each pair of years were treated separately. So the steps described in this example would be replicated for the comparison of other current and previous year average scale scores.

To use the FDR procedure to take into account that all comparisons are of interest to us, the percents of confidence in the example are ordered from largest to smallest: 62, 35, 20, 4, and 1. In the FDR procedure, 62 percent confidence for the Group 4 comparison would be compared to 5 percent, 35 percent for the Group 5 comparison would be compared to $0.05 \times (5-1)/5 = 0.04 \times 100 = 4$ percent,[24] 20 percent for the Group 1 comparison would be compared to $0.05 \times (5-2)/5 = 0.03 \times 100 = 3$ percent, 4 percent for the Group 3 comparison would be compared to $0.05 \times (5-3)/5 = 0.02 \times 100 = 2$ percent, and 1 percent for the Group 2 comparison (actually slightly smaller than 1 prior to rounding) would be compared to $0.05 \times (5-4)/5 = 0.01 \times 100 = 1$ percent. The last of these comparisons is the only one for which the percent confidence is smaller than the FDR procedure value. The difference in the current year and previous years' average scale scores for the Group 2 students is significant; for all of the other groups, average scale scores for current and previous year are not significantly different from one another. In practice, a very small number of counterintuitive results occur when using the FDR procedures to examine between-year differences in subgroup results by jurisdiction. In those cases, results were not included in this report. NCES is continuing to evaluate the use of FDR and multiple-comparison procedures for future reporting.

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[24] The level of confidence times the number of comparisons minus one divided by the number of comparisons is $0.05 \times (5-1)/5 = 0.04 \times 100 = 4$ percent.

NAEP Reporting Groups

Results are provided for groups of students defined by shared characteristics—region of the country, gender, race or ethnicity, school's type of location, eligibility for the free/reduced-price school lunch program, and type of school. Based on participation rate criteria, results are reported for subpopulations only when sufficient numbers of students and adequate school representation are present. The minimum requirement is at least 62 students in a particular subgroup from at least five primary sampling units (PSUs).[25] However, the data for all students, regardless of whether their subgroup was reported separately, were included in computing overall results. Definitions of the subpopulations are presented below.

Region

Results in NAEP are reported for four regions of the nation: Northeast, Southeast, Central, and West. Figure A.1 shows how states are subdivided into these NAEP regions. All 50 states and the District of Columbia are listed. Other jurisdictions, including territories and the two Department of Defense Educational Activities jurisdictions are not assigned to any region.

Gender

Results are reported separately for males and females.

Figure A.1

States by Region

States included in the four NAEP regions: 2001

Northeast	Southeast	Central	West
Connecticut	Alabama	Illinois	Alaska
Delaware	Arkansas	Indiana	Arizona
District of Columbia	Florida	Iowa	California
Maine	Georgia	Kansas	Colorado
Maryland	Kentucky	Michigan	Hawaii
Massachusetts	Louisiana	Minnesota	Idaho
New Hampshire	Mississippi	Missouri	Montana
New Jersey	North Carolina	Nebraska	Nevada
New York	South Carolina	North Dakota	New Mexico
Pennsylvania	Tennessee	Ohio	Oklahoma
Rhode Island	*Virginia	South Dakota	Oregon
Vermont	West Virginia	Wisconsin	Texas
*Virginia			Utah
			Washington
			Wyoming

* The part of Virginia that is included in the Northeast region is the Washington, DC metropolitan area; the remainder of the state is included in the Southeast region.

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[25] For the national assessment, a PSU is a selected geographic region (a county, group of counties, or metropolitan statistical area). Further details about the procedure for determining minimum sample size appear in the *NAEP 2000 Technical Report* and the forthcoming *NAEP 2001 Technical Report*.

Race/Ethnicity

The race/ethnicity variable is derived from two questions asked of students and from school records, and it is used for race/ethnicity subgroup comparisons. Two questions from the set of general student background questions were used to determine race/ethnicity:

If you are Hispanic, what is your Hispanic background?

☐ I am not Hispanic

☐ Mexican, Mexican American, or Chicano

☐ Puerto Rican

☐ Cuban

☐ Other Spanish or Hispanic background

Students who responded to this question by filling in the second, third, fourth, or fifth oval were considered Hispanic. For students who filled in the first oval, did not respond to the question, or provided information that was illegible or could not be classified, responses to the following question were examined to determine their race/ethnicity.

Which best describes you?

☐ White (not Hispanic)

☐ Black (not Hispanic)

☐ Hispanic ("Hispanic" means someone who is Mexican, Mexican American, Chicano, Puerto Rican, Cuban, or other Spanish or Hispanic background)

☐ Asian or Pacific Islander ("Asian or Pacific Islander" means someone who is from a Chinese, Japanese, Korean, Filipino, Vietnamese, Asian American or some other Asian or Pacific Islander background.)

☐ American Indian or Alaskan Native ("American Indian or Alaskan Native" means someone who is from one of the American Indian tribes or one of the original people of Alaska.)

☐ Other (specify)

Students' race/ethnicity was then assigned on the basis of their responses. For students who filled in the sixth oval ("Other"), provided illegible information or information that could not be classified, or did not respond at all, race/ethnicity was assigned as determined by school records.

Race/ethnicity could not be determined for students who did not respond to either of the demographic questions and whose schools did not provide information about race/ethnicity.

Also, some students indicated that they were from a Hispanic background (e.g., Puerto Rican or Cuban) and that a racial/ethnic category other than Hispanic best described them. These students were classified as Hispanic based on the rules described above.

Type of Location

Results from the 2001 assessment are reported for students attending schools in three mutually exclusive location types: central city, urban fringe/large town, and rural/small town:

Central City: This category includes central cities of all Standard Metropolitan Statistical Areas (SMSA) as defined by the Office of Management and Budget. Central City is a geographical term and is not synonymous with "inner city."

Urban Fringe/Large Town: The urban fringe category includes all densely settled places and areas within SMSA's that are classified as urban by the Bureau of the Census, but which do not qualify as Central City. A Large Town is defined as a place outside a SMSA with a population greater than or equal to 25,000.

Rural/Small Town: Rural includes all places and areas with populations of less than 2,500 that are classified as rural by the Bureau of the Census. A Small Town is defined as a place outside a SMSA with a population of less than 25,000, but greater than or equal to 2,500.

Results for each type of location are not compared across years. This was due to new methods used by NCES to identify the type of location assigned to each school in the Common Core of Data (CCD). The new methods were put into place by NCES in order to improve the quality of the assignments and they take into account more information about the exact physical location of the school. The variable was revised in NAEP beginning with the 2000 assessments.

Eligibility for the Free/Reduced-Price School Lunch Program

Based on available school records, students were classified as either currently eligible for the free/reduced-price school lunch component of the Department of Agriculture's National School Lunch Program or not eligible. Eligibility for the program is determined by students' family income in relation to the federally established poverty level. Free lunch qualification is set at 130 percent of the poverty level, and reduced-price lunch qualification is set at 170 percent of the poverty level. The classification applies only to the school year when the assessment was administered (i.e., the 2000–2001 school year) and is not based on eligibility in previous years. If school records were not available, the student was classified as "Information not available." If the school did not participate in the program, all students in that school were classified as "Information not available."

Type of School

Results are reported by the type of school that the student attends—public or nonpublic. Nonpublic schools include Catholic and other private schools.[26] Because they are funded by federal authorities, not state/local governments, Bureau of Indian Affairs (BIA) schools and Department of Defense Domestic Dependent Elementary and Secondary Schools (DDESS) are not included in either the public or nonpublic categories; they are included in the overall national results.

Grade 12 Participation Rates

NAEP has been described as a "low-stakes" assessment. That is, students receive no individual scores, and their NAEP performance has no effect on their grades, promotions, or graduation. There has been continued concern that this lack of consequences affects participation rates of students and schools, as well as the motivation of students to perform well on NAEP. Of particular concern has been the performance of twelfth-graders, who typically have lower student participation rates than fourth- and eighth-graders, and who are more likely to omit responses compared to the younger cohorts.

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[26] Through a pilot study, more detailed breakdowns of nonpublic school results are available on the NAEP Web Site (http://nces.ed.gov/nationsreportcard/geography/results/index.asp).

In NAEP, there has been a consistent pattern of lower participation rates for older students. In the 2001 NAEP assessments, for example, the student participation rates were 95 percent and 93 percent at grades 4 and 8, respectively. At grade 12, however, the participation rate was 77 percent. School participation rates (the percentage of sampled schools that participated in the assessment) have also typically decreased with grade level. Again citing the 2001 assessments, the school participation rate was 88 percent for the fourth grade, 87 percent for the eighth grade, and 80 percent for the twelfth grade.

The effect of participation rates on student performance, however, is unclear. Students may choose not to participate in NAEP for many reasons, such as desire to attend regular classes so as not to miss important instruction or conflict with other school-based activities. Similarly, there are a variety of reasons for which various schools do not participate. The sampling weights and nonresponse adjustments, described earlier in this document, provide an approximate statistical adjustment for nonparticipation. However, the effect of some school and student nonparticipation may have some undetermined effect on results.

More research is needed to delineate the factors that contribute to nonparticipation and lack of motivation. To that end, NCES is currently investigating how various types of incentives can be effectively used to increase participation in NAEP. One report that examines the impact of monetary incentives on student effort and performance is available on the NCES Web Site at http://nces.ed.gov/pubsearch/. Enter NCES#: 2001024.

Cautions in Interpretations

As described earlier, the NAEP geography scale makes it possible to examine relationships between students' performance and various background factors measured by NAEP. However, a relationship that exists between achievement and another variable does not reveal its underlying cause, which may be influenced by a number of other variables. Similarly, the assessments do not capture the influence of unmeasured variables. The results are most useful when they are considered in combination with other knowledge about the student population and the educational system, such as trends in instruction, changes in the school-age population, and societal demands and expectations.

B

Appendix B
Data Appendix

This appendix contains complete data for all the tables and figures presented in this report, including average scores, achievement-level results, and percentages of students. In addition, standard errors appear in parentheses next to each scale score and percentage. The comparisons presented in this report are based on statistical tests that consider the magnitude of the difference between group averages or percentages and the standard errors of those statistics. Because NAEP scores and percentages are based on samples rather than the entire population(s), the results are subject to a measure of uncertainty reflected in the standard errors of the estimates. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. As with the figures and tables in the chapters, significant differences between results of previous assessments and the 2001 assessment are highlighted.

Appendix Focus

Complete data for all tables and figures.

Appendix Contents

Average Scores

Achievement-Level Results

Percentages of Students

Standard Errors

Table B.1: Data for Figure 2.1 National Scale Score Results

Average geography scale scores, grades 4, 8, and 12: 1994 and 2001

	Grade 4	Grade 8	Grade 12
1994	206 (1.2)	260 (0.7)	285 (0.7)
2001	209 (1.0) *	262 (0.9) *	285 (0.8)

Standard errors of the estimated scale scores appear in parentheses.

* Significantly different from 1994.

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and 2001 Geography Assessments.

Table B.2: Data for Figure 2.2: National Performance Distribution

National geography scale score percentiles, grades 4, 8, and 12: 1994 and 2001

		10th	25th	50th	75th	90th
Grade 4	1994	146 (1.9)	179 (1.5)	211 (1.1)	237 (1.3)	257 (2.0)
	2001	158 (1.7) *	185 (1.9) *	212 (1.1)	236 (1.0)	254 (0.9)
Grade 8	1994	213 (1.3)	237 (1.0)	263 (1.1)	285 (0.9)	302 (1.9)
	2001	217 (1.0) *	241 (0.9) *	265 (1.1)	286 (0.9)	303 (1.2)
Grade 12	1994	244 (0.9)	265 (1.1)	287 (0.9)	306 (1.0)	321 (1.0)
	2001	247 (1.7)	267 (1.2)	287 (0.9)	305 (0.9)	319 (1.0)

Standard errors of the estimated scale scores appear in parentheses.

* Significantly different from 1994.

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and 2001 Geography Assessments.

Table B.3: Data for Figure 2.3: National Achievement-Level Results

Percentage of students within and at or above geography achievement levels, grades 4, 8, and 12: 1994 and 2001

		Below *Basic*	At *Basic*	At *Proficient*	At *Advanced*	At or above *Basic*	At or above *Proficient*
Grade 4	1994	30 (1.1)	48 (1.0)	19 (1.1)	3 (0.4)	70 (1.1)	22 (1.2)
	2001	26 (1.2) *	53 (1.4) *	19 (1.1)	2 (0.3)	74 (1.2) *	21 (1.0)
Grade 8	1994	29 (1.0)	43 (1.1)	24 (0.9)	4 (0.4)	71 (1.0)	28 (1.0)
	2001	26 (0.9) *	44 (0.9)	26 (1.1)	4 (0.6)	74 (0.9) *	30 (1.2)
Grade 12	1994	30 (0.9)	43 (1.0)	25 (1.0)	2 (0.5)	70 (0.9)	27 (1.2)
	2001	29 (0.9)	47 (0.9) *	23 (1.0)	1 (0.3)	71 (0.9)	25 (1.1)

Standard errors of the estimated percentages appear in parentheses.

* Significantly different from 1994.

NOTE: Percentages within each geography achievement-level range may not add to 100, or to the exact percentages at or above achievement levels, due to rounding.

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and 2001 Geography Assessments.

Table B.4: Data for Figure 3.1 National Scale Score Results by Gender

Percentage of students and average geography scale scores by gender, grades 4, 8, and 12: 1994 and 2001

		Male	Female
Grade 4	1994	51 (1.0) 208 (1.4)	49 (1.0) 203 (1.4)
	2001	51 (0.8) 212 (1.1)	49 (0.8) 207 (1.2)
Grade 8	1994	51 (0.7) 262 (0.9)	49 (0.7) 258 (0.8)
	2001	51 (0.6) 264 (1.0)	49 (0.6) 260 (1.1)
Grade 12	1994	50 (1.0) 288 (0.8)	50 (1.0) 281 (0.9)
	2001	48 (0.8) 287 (0.9)	52 (0.8) 282 (0.8)

The percentage of students is listed first with the corresponding average scale score presented below.
Standard errors of the estimated percentages and scale scores appear in parentheses.
NOTE: Percentages may not add to 100 due to rounding.
SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and 2001 Geography Assessments.

Table B.5: Data for Figure 3.2 National Scale Score Differences by Gender

Differences in average geography scale scores by gender, grades 4, 8, and 12: 1994 and 2001

		Male-Female
Grade 4	1994	5 (2.0)
	2001	5 (1.7)
Grade 8	1994	4 (1.2)
	2001	4 (1.4)
Grade 12	1994	7 (1.2)
	2001	4 (1.2)

Standard errors of the estimated difference in scale scores appear in parentheses.
Score differences are calculated based on differences between unrounded average scale scores.
SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and 2001 Geography Assessments.

Table B.6: Data for Figure 3.3 National Achievement-Level Results by Gender

Percentage of students within and at or above geography achievement levels by gender, grades 4, 8, and 12: 1994 and 2001

			Below ***Basic***	At ***Basic***	At ***Proficient***	At ***Advanced***	At or above ***Basic***	At or above ***Proficient***
Grade 4	Male	1994	29 (1.3)	46 (1.4)	22 (1.6)	4 (0.7)	71 (1.3)	26 (1.7)
		2001	25 (1.3)	51 (1.6) *	21 (1.4)	3 (0.5)	75 (1.3)	24 (1.4)
	Female	1994	32 (1.4)	49 (1.3)	17 (1.2)	2 (0.5)	68 (1.4)	19 (1.3)
		2001	28 (1.6)	54 (1.7) *	17 (1.2)	1 (0.4)	72 (1.6)	18 (1.1)
Grade 8	Male	1994	28 (1.3)	42 (1.4)	25 (1.2)	5 (0.6)	72 (1.3)	30 (1.2)
		2001	25 (1.0)	42 (1.3)	29 (1.7)	5 (0.7)	75 (1.0)	33 (1.5)
	Female	1994	31 (1.1)	44 (1.2)	22 (1.2)	3 (0.4)	69 (1.1)	25 (1.1)
		2001	27 (1.2)	47 (1.1)	24 (1.3)	3 (0.6)	73 (1.2)	26 (1.4)
Grade 12	Male	1994	27 (1.1)	41 (1.1)	29 (1.1)	2 (0.7)	73 (1.1)	32 (1.4)
		2001	27 (1.1)	45 (1.3) *	26 (1.4)	2 (0.4)	73 (1.1)	28 (1.5)
	Female	1994	33 (1.2)	45 (1.5)	21 (1.2)	1 (0.4)	67 (1.2)	22 (1.4)
		2001	30 (1.0)	48 (1.0) *	20 (0.9)	1 (0.3)	70 (1.0)	21 (1.0)

Standard errors of the estimated percentages appear in parentheses.

* Significantly different from 1994.

NOTE: Percentages within each geography achievement-level range may not add to 100, or to the exact percentages at or above achievement levels, due to rounding.

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and 2001 Geography Assessments.

Table B.7: Data for Figure 3.4 National Scale Score Results by Race/Ethnicity

Percentage of students and average geography scale scores by race/ethnicity, grades 4, 8, and 12: 1994 and 2001

		White	Black	Hispanic	Asian/ Pacific Islander	American Indian
Grade 4	1994	69 (0.2)	15 (0.1)	12 (0.2)	3 (0.2)	1 (0.2)
		218 (1.5)	168 (2.5)	183 (2.5)	214 (3.8)	193 (3.6)
	2001	64 (0.3)	14 (0.2)	16 (0.3)	3 (0.2)	2 (0.2)
		222 (1.0)	181 (1.8) *	184 (2.8)	212 (2.7)	199 (3.6)
Grade 8	1994	69 (0.2)	15 (0.1)	11 (0.1)	3 (0.4)	2 (0.4)
		270 (0.8)	229 (1.7)	239 (1.9)	264 (5.2)	248 (3.4) !
	2001	66 (0.3)	14 (0.2)	14 (0.2)	4 (0.2)	1 (0.2)
		273 (1.0)	234 (1.7)	240 (1.7)	266 (2.5)	261 (5.8)
Grade 12	1994	74 (0.3)	12 (0.4)	8 (0.2)	4 (0.2)	1 (0.2)
		291 (0.8)	258 (1.4)	268 (1.5)	285 (2.7)	*** (***)
	2001	70 (0.3)	13 (0.3)	12 (0.2)	5 (0.2)	1 (0.2)
		291 (0.9)	260 (1.4)	270 (1.5)	286 (2.9)	288 (3.6) !

The percentage of students is listed first with the corresponding average scale score presented below.
Standard errors of the estimated percentages and scale scores appear in parentheses.
* Significantly different from 1994.
! The nature of the sample does not allow accurate determination of the variability of the statistic.
***(***) Sample size is insufficient to permit a reliable estimate.
NOTE: Percentages may not add to 100 due to rounding.
SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and 2001 Geography Assessments.

Table B.8: Data for Figure 3.5 National Scale Score Differences by Race/Ethnicity

Differences in average geography scale scores by race/ethnicity, grades 4, 8, and 12: 1994 and 2001

		White-Black	White-Hispanic
Grade 4	1994	50 (2.9)	35 (2.9)
	2001	40 (2.0) *	38 (3.0)
Grade 8	1994	40 (1.9)	31 (2.0)
	2001	38 (2.0)	33 (2.0)
Grade 12	1994	33 (1.6)	23 (1.7)
	2001	32 (1.7)	21 (1.8)

Standard errors of the estimated difference in scale scores appear in parentheses.
*Significantly different from 1994.
Score differences are calculated based on differences between unrounded average scale scores.
SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and 2001 Geography Assessments.

Table B.9: Data for Figure 3.6a, b, c National Achievement-Level Results by Race/Ethnicity

Percentage of students within and at or above geography achievement levels by race/ethnicity, grades 4, 8, and 12: 1994 and 2001

			Below *Basic*	At *Basic*	At *Proficient*	At *Advanced*	At or above *Basic*	At or above *Proficient*
Grade 4	White	1994	19 (1.3)	53 (1.3)	25 (1.5)	4 (0.6)	81 (1.3)	29 (1.6)
		2001	13 (1.3) *	58 (1.8)	26 (1.6)	3 (0.5)	87 (1.3) *	29 (1.5)
	Black	1994	66 (2.4)	32 (2.4)	2 (0.6)	# (***)	34 (2.4)	3 (0.6)
		2001	56 (2.1) *	39 (2.1)	5 (0.8)	# (***)	44 (2.1) *	5 (0.9)
	Hispanic	1994	51 (2.7)	39 (2.0)	9 (1.7)	1 (0.4)	49 (2.7)	10 (1.7)
		2001	51 (3.0)	43 (2.5)	6 (1.0)	# (***)	49 (3.0)	6 (1.0)
	Asian/Pacific Islander	1994	24 (4.0)	49 (4.3)	23 (3.9)	4 (2.2)	76 (4.0)	27 (4.4)
		2001	23 (3.4)	52 (4.4)	23 (3.1)	1 (0.9)	77 (3.4)	25 (3.0)
	American Indian	1994	38 (5.7)	53 (5.8)	9 (3.6)	# (***)	62 (5.7)	9 (3.9)
		2001	34 (4.9)	53 (6.3)	13 (4.2)	# (***)	66 (4.9)	13 (4.1)
Grade 8	White	1994	18 (0.9)	47 (1.2)	30 (1.2)	5 (0.5)	82 (0.9)	36 (1.3)
		2001	14 (0.9) *	48 (1.2)	34 (1.5)	5 (0.8)	86 (0.9) *	39 (1.7)
	Black	1994	66 (2.9)	30 (2.8)	4 (0.7)	# (0.3)	34 (2.9)	5 (0.7)
		2001	60 (2.3)	34 (1.9)	6 (0.8)	# (***)	40 (2.3)	6 (0.8)
	Hispanic	1994	50 (3.6)	39 (3.1)	10 (1.2)	1 (0.5)	50 (3.6)	10 (1.2)
		2001	52 (1.9)	38 (1.6)	9 (1.1)	1 (0.2)	48 (1.9)	10 (1.0)
	Asian/Pacific Islander	1994	27 (6.3)	43 (4.4)	25 (3.1)	6 (3.1)	73 (6.3)	30 (4.2)
		2001	21 (3.4)	47 (4.8)	28 (3.5)	4 (1.8)	79 (3.4)	32 (3.2)
	American Indian	1994	41 (5.1) !	43 (4.9) !	13 (3.5) !	2 (1.3) !	59 (5.1) !	15 (3.6) !
		2001	28 (6.8)	41 (11.1)	29 (8.9)	3 (***)	72 (6.8)	31 (11.2)
Grade 12	White	1994	22 (0.9)	46 (1.3)	31 (1.2)	2 (0.6)	78 (0.9)	33 (1.5)
		2001	19 (0.9)	51 (1.1) *	29 (1.2)	2 (0.4)	81 (0.9)	31 (1.4)
	Black	1994	68 (2.3)	27 (2.1)	5 (1.0)	# (***)	32 (2.3)	5 (1.0)
		2001	65 (2.3)	31 (2.1)	4 (0.7)	# (***)	35 (2.3)	4 (0.7)
	Hispanic	1994	52 (2.8)	38 (2.4)	10 (1.7)	# (***)	48 (2.8)	10 (1.8)
		2001	48 (2.6)	42 (2.5)	10 (1.4)	# (0.1)	52 (2.6)	10 (1.4)
	Asian/Pacific Islander	1994	31 (3.1)	41 (3.4)	25 (4.0)	3 (1.3)	69 (3.1)	28 (4.4)
		2001	28 (4.3)	45 (3.0)	25 (4.6)	1 (0.7)	72 (4.3)	26 (4.7)
	American Indian	1994	*** (***)	*** (***)	*** (***)	*** (***)	*** (***)	*** (***)
		2001	26 (6.0) !	41 (7.0) !	31 (5.3) !	1 (***) !	74 (6.0) !	32 (4.9) !

Standard errors of the estimated percentages appear in parentheses.

* Significantly different from 1994.

# Percentage is between 0.0 and 0.5.

! The nature of the sample does not allow accurate determination of the variability of the statistic.

(***) Standard error estimates cannot be accurately determined.

***(***) Sample size is insufficient to permit a reliable estimate.

NOTE: Percentages within each geography achievement-level range may not add to 100, or to the exact percentages at or above achievement levels, due to rounding.

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and 2001 Geography Assessments.

Table B.10: Data for Figure 3.7 National Scale Score Results by Region of the Country

Percentage of students and average geography scale scores by region of the country, grades 4, 8, and 12: 1994 and 2001

		Northeast	Southeast	Central	West
Grade 4	1994	22 (0.8)	23 (1.0)	25 (0.8)	30 (0.7)
		203 (2.7)	200 (2.5)	215 (3.2)	205 (1.7)
	2001	21 (0.8)	24 (1.3)	24 (0.4)	31 (1.3)
		214 (2.8) *	207 (2.1)	219 (1.8)	200 (2.5)
Grade 8	1994	20 (0.8)	25 (1.0)	24 (0.6)	31 (0.7)
		266 (1.9)	252 (1.6)	268 (1.6)	255 (1.8)
	2001	21 (0.8)	22 (1.0)	25 (0.6)	32 (1.2)
		266 (2.4)	260 (2.0) *	270 (2.5)	255 (1.5)
Grade 12	1994	21 (0.5)	23 (0.8)	28 (0.7)	29 (0.7)
		284 (1.6)	278 (1.1)	289 (1.8)	286 (1.9)
	2001	20 (0.9)	21 (1.2)	27 (0.6)	31 (1.4)
		286 (2.8)	281 (1.0)	287 (1.3)	283 (1.3)

The percentage of students is listed first with the corresponding average scale score presented below.

Standard errors of the estimated percentages and scale scores appear in parentheses.

* Significantly different from 1994.

NOTE: Percentages may not add to 100 due to rounding.

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and 2001 Geography Assessments.

Table B.11: Data for Figure 3.8a, b, c National Achievement-Level Results by Region of the Country

Percentage of students within and at or above geography achievement levels by region of the country, grades 4, 8, and 12: 1994 and 2001

			Below *Basic*	At *Basic*	At *Proficient*	At *Advanced*	At or above *Basic*	At or above *Proficient*
Grade 4	Northeast	1994	33 (2.7)	45 (2.5)	19 (2.1)	3 (0.8)	67 (2.7)	22 (2.5)
		2001	22 (3.7)	54 (3.7)	22 (2.1)	3 (0.9)	78 (3.7)	24 (2.2)
	Southeast	1994	36 (2.6)	48 (2.2)	14 (1.9)	2 (0.5)	64 (2.6)	17 (2.0)
		2001	28 (2.5)	54 (2.7)	17 (1.8)	1 (0.6)	72 (2.5)	18 (1.9)
	Central	1994	22 (2.6)	49 (2.3)	25 (3.2)	4 (1.3)	78 (2.6)	28 (3.3)
		2001	18 (1.7)	51 (1.8)	27 (2.3)	3 (0.7)	82 (1.7)	30 (2.5)
	West	1994	30 (1.7)	48 (1.9)	19 (2.0)	3 (0.6)	70 (1.7)	21 (1.7)
		2001	34 (2.7)	52 (2.4)	13 (1.5)	1 (0.3)	66 (2.7)	14 (1.7) *
Grade 8	Northeast	1994	24 (2.2)	43 (1.6)	28 (1.8)	6 (1.0)	76 (2.2)	33 (2.0)
		2001	22 (2.5)	44 (2.1)	29 (3.2)	4 (1.3)	78 (2.5)	34 (3.3)
	Southeast	1994	38 (2.1)	40 (1.8)	19 (1.4)	3 (0.5)	62 (2.1)	21 (1.6)
		2001	27 (2.4) *	46 (1.7)	24 (1.5)	3 (0.6)	73 (2.4) *	26 (1.6)
	Central	1994	20 (1.7)	44 (1.9)	30 (1.9)	6 (0.9)	80 (1.7)	36 (2.1)
		2001	18 (2.3)	43 (2.4)	32 (3.1)	6 (1.3)	82 (2.3)	38 (3.7)
	West	1994	33 (2.4)	45 (1.8)	20 (1.8)	3 (0.7)	67 (2.4)	23 (2.0)
		2001	34 (1.7)	44 (1.7)	21 (1.6)	2 (0.6)	66 (1.7)	23 (1.7)
Grade 12	Northeast	1994	31 (2.3)	44 (2.1)	23 (1.8)	2 (0.6)	69 (2.3)	25 (2.1)
		2001	29 (2.3)	46 (2.4)	24 (3.2)	2 (1.1)	71 (2.3)	26 (4.1)
	Southeast	1994	40 (1.5)	41 (1.5)	19 (1.4)	1 (0.6)	60 (1.5)	20 (1.3)
		2001	33 (1.6) *	46 (1.4)	20 (1.2)	1 (0.3)	67 (1.6) *	21 (1.3)
	Central	1994	25 (2.1)	43 (2.3)	30 (2.2)	2 (1.0)	75 (2.1)	32 (2.9)
		2001	24 (1.8)	48 (1.8)	27 (1.8)	1 (0.5)	76 (1.8)	28 (1.9)
	West	1994	28 (2.1)	43 (1.6)	27 (2.3)	2 (0.7)	72 (2.1)	29 (2.6)
		2001	30 (1.9)	47 (1.7)	22 (1.7)	1 (0.4)	70 (1.9)	23 (1.8)

Standard errors of the estimated percentages appear in parentheses.

* Significantly different from 1994.

NOTE: Percentages within each geography achievement-level range may not add to 100, or to the exact percentages at or above achievement levels, due to rounding.

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and 2001 Geography Assessments.

Table B.12: Data for Figure 3.9 National Scale Score Results by Parents' Education

Percentage of students and average geography scale scores by parents' highest level of education, grades 8 and 12: 1994 and 2001

		Less than high school	Graduated high school	Some education after high school	Graduated college	Unknown
Grade 8	1994	7 (0.5)	22 (0.9)	19 (0.7)	42 (1.2)	10 (0.5)
		238 (1.7)	250 (1.2)	265 (1.0)	272 (1.0)	234 (1.5)
	2001	6 (0.4)	18 (0.5)	19 (0.6)	48 (1.2)	9 (0.6)
		241 (1.7)	253 (1.2)	266 (1.0)	274 (0.9)	245 (1.5) *
Grade 12	1994	7 (0.4)	22 (0.8)	25 (0.7)	44 (1.2)	3 (0.2)
		263 (1.2)	274 (1.1)	286 (1.0)	294 (0.9)	257 (2.8)
	2001	7 (0.4)	19 (0.7)	25 (0.7)	46 (1.1)	3 (0.3)
		269 (1.7) *	276 (0.9)	284 (0.9)	293 (1.1)	257 (2.9)

The percentage of students is listed first with the corresponding average scale score presented below.

Standard errors of the estimated percentages and scale scores appear in parentheses.

* Significantly different from 1994.

NOTE: Percentages may not add to 100 due to rounding.

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and 2001 Geography Assessments.

Table B.13: Data for Figure 3.10a, b National Achievement-Level Results by Parents' Education

Percentage of students within and at or above geography achievement levels by parents' highest level of education, grades 8 and 12: 1994 and 2001

		Below *Basic*	At *Basic*	At *Proficient*	At *Advanced*	At or above *Basic*	At or above *Proficient*
Grade 8							
Less than high school	1994	53 (3.4)	39 (3.4)	8 (1.4)	1 (***)	47 (3.4)	8 (1.6)
	2001	52 (2.6)	41 (3.6)	8 (2.6)	# (***)	48 (2.6)	8 (2.6)
Graduated high school	1994	38 (2.0)	47 (2.1)	14 (1.6)	1 (0.6)	62 (2.0)	15 (1.5)
	2001	34 (2.1)	48 (1.5)	16 (2.1)	1 (0.6)	66 (2.1)	18 (1.9)
Some education after high school	1994	21 (1.3)	50 (2.7)	26 (2.5)	3 (0.8)	79 (1.3)	29 (2.3)
	2001	20 (1.6)	51 (1.8)	27 (1.7)	2 (0.8)	80 (1.6)	30 (1.8)
Graduated College	1994	18 (1.2)	41 (1.4)	34 (1.3)	7 (0.7)	82 (1.2)	41 (1.4)
	2001	14 (0.9)	42 (1.5)	37 (1.3)	6 (0.9)	86 (0.9)	43 (1.5)
Unknown	1994	56 (2.9)	35 (3.2)	8 (1.6)	1 (***)	44 (2.9)	8 (1.5)
	2001	44 (2.6) *	44 (3.1)	11 (1.9)	1 (0.5)	56 (2.6) *	12 (1.9)
Grade 12							
Less than high school	1994	59 (2.9)	34 (3.5)	7 (2.0)	0 (***)	41 (2.9)	7 (2.0)
	2001	52 (3.5)	38 (3.2)	10 (1.5)	# (***)	48 (3.5)	10 (1.5)
Graduated high school	1994	44 (2.0)	42 (2.5)	13 (1.6)	# (0.3)	56 (2.0)	14 (1.6)
	2001	38 (2.0)	50 (1.8) *	12 (1.6)	# (***)	62 (2.0)	12 (1.6)
Some education after high school	1994	25 (1.5)	51 (1.7)	23 (1.4)	1 (***)	75 (1.5)	24 (1.8)
	2001	27 (1.2)	52 (1.7)	20 (1.6)	1 (0.3)	73 (1.2)	21 (1.7)
Graduated College	1994	19 (1.1)	41 (1.3)	37 (1.5)	3 (0.8)	81 (1.1)	40 (1.6)
	2001	18 (1.1)	46 (1.4) *	34 (1.5)	3 (0.6)	82 (1.1)	36 (1.8)
Unknown	1994	64 (4.4)	29 (4.1)	7 (1.6)	0 (***)	36 (4.4)	7 (1.6)
	2001	67 (4.2)	28 (4.3)	5 (2.0)	0 (***)	33 (4.2)	5 (2.0)

Standard errors of the estimated percentages appear in parentheses.
* Significantly different from 1994.
# Percentage is between 0.0 and 0.5.
(***) Standard error estimates cannot be accurately determined.
NOTE: Percentages within each geography achievement-level range may not add to 100, or to the exact percentages at or above achievement levels, due to rounding.
SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and 2001 Geography Assessments.

Table B.14: Data for Figure 3.11 National Scale Score Results by Type of School

Percentage of students and average geography scale scores by type of school, grades 4, 8, and 12: 1994 and 2001

		Public	Nonpublic	Nonpublic: Catholic	Nonpublic: Other
Grade 4	1994	90 (0.8)	10 (0.8)	6 (0.7)	4 (0.5)
		204 (1.4)	221 (2.2)	222 (2.6)	220 (3.8)
	2001	89 (1.2)	11 (1.2)	6 (0.8)	5 (0.9)
		207 (1.1)	226 (2.2)	230 (1.7)	221 (4.4)
Grade 8	1994	90 (0.8)	10 (0.8)	6 (0.6)	4 (0.6)
		258 (0.8)	276 (1.3)	276 (1.6)	276 (2.6)
	2001	90 (0.9)	10 (0.9)	5 (0.6)	5 (0.7)
		261 (1.0) *	274 (2.5)	277 (2.0)	271 (4.7)
Grade 12	1994	89 (1.0)	11 (1.0)	6 (0.9)	4 (0.6)
		283 (0.8)	294 (1.6)	291 (3.0)	298 (2.0)
	2001	92 (0.8)	8 (0.8)	4 (0.6)	3 (0.6)
		284 (0.8)	291 (2.3)	294 (2.0)	287 (4.3)

The percentage of students is listed first with the corresponding average scale score presented below.

Standard errors of the estimated percentages and scale scores appear in parentheses.

* Significantly different from 1994.

NOTE: Percentages may not add to 100 due to rounding.

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and 2001 Geography Assessments.

Table B.15: Data for Figure 3.12a, b, c National Achievement-Level Results by Type of School

Percentage of students within and at or above geography achievement levels by type of school, grades 4, 8, and 12: 1994 and 2001

			Below ***Basic***	At ***Basic***	At ***Proficient***	At ***Advanced***	At or above ***Basic***	At or above ***Proficient***
Grade 4	Public	1994	32 (1.2)	47 (1.1)	19 (1.2)	3 (0.5)	68 (1.2)	21 (1.3)
		2001	28 (1.3)	52 (1.6) *	18 (1.1)	2 (0.3)	72 (1.3)	20 (1.1)
	Nonpublic	1994	16 (2.2)	53 (2.3)	26 (2.3)	5 (1.2)	84 (2.2)	30 (2.5)
		2001	9 (2.2)	59 (2.1)	28 (2.6)	3 (0.9)	91 (2.2)	31 (2.8)
	Nonpublic: Catholic	1994	15 (2.8)	54 (3.2)	25 (2.4)	5 (1.9)	85 (2.8)	30 (3.0)
		2001	7 (1.2) *	56 (2.3)	32 (2.0)	4 (1.6)	93 (1.2) *	36 (2.5)
	Nonpublic: other	1994	18 (3.5)	52 (3.6)	26 (3.7)	4 (1.2)	82 (3.5)	30 (4.1)
		2001	12 (5.1)	63 (4.1)	23 (4.9)	2 (1.1)	88 (5.1)	25 (5.5)
Grade 8	Public	1994	31 (1.0)	43 (1.1)	22 (1.0)	4 (0.4)	69 (1.0)	26 (1.0)
		2001	28 (0.9) *	44 (1.0)	25 (1.2)	3 (0.6)	72 (0.9) *	28 (1.2)
	Nonpublic	1994	13 (1.7)	43 (2.3)	36 (2.3)	8 (1.4)	87 (1.7)	44 (2.2)
		2001	13 (2.6)	46 (3.6)	36 (3.5)	5 (1.3)	87 (2.6)	41 (4.2)
	Nonpublic: Catholic	1994	11 (1.8)	45 (2.2)	35 (2.8)	8 (1.6)	89 (1.8)	44 (2.6)
		2001	11 (2.5)	44 (3.4)	40 (2.9)	6 (1.3)	89 (2.5)	46 (3.4)
	Nonpublic: other	1994	14 (3.2)	41 (4.7)	38 (4.6)	7 (2.0)	86 (3.2)	45 (4.8)
		2001	15 (4.7)	48 (5.1)	33 (6.2)	4 (1.8)	85 (4.7)	37 (7.2)
Grade 12	Public	1994	32 (1.0)	42 (1.1)	24 (1.0)	1 (0.5)	68 (1.0)	26 (1.3)
		2001	29 (1.0)	47 (1.0) *	23 (1.1)	1 (0.3)	71 (1.0)	24 (1.2)
	Nonpublic	1994	17 (2.2)	47 (1.7)	33 (2.3)	3 (0.7)	83 (2.2)	36 (2.3)
		2001	20 (3.0)	48 (2.0)	30 (2.6)	2 (0.7)	80 (3.0)	32 (3.0)
	Nonpublic: Catholic	1994	20 (3.9)	47 (2.0)	32 (3.6)	1 (0.5)	80 (3.9)	33 (3.8)
		2001	15 (2.5)	51 (2.5)	32 (3.4)	2 (0.6)	85 (2.5)	34 (3.4)
	Nonpublic: other	1994	13 (2.4)	47 (2.9)	35 (2.9)	5 (1.5)	87 (2.4)	40 (3.1)
		2001	27 (5.5)	44 (3.1)	26 (4.7)	2 (1.3)	73 (5.5)	29 (5.6)

Standard errors of the estimated percentages appear in parentheses.

* Significantly different from 1994.

NOTE: Percentages within each geography achievement-level range may not add to 100, or to the exact percentages at or above achievement levels, due to rounding.

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and 2001 Geography Assessments.

Table B.16: Data for Table 3.1 National Scale Score Results by Type of Location

Percentage of students and average geography scale scores by type of school location, grades 4, 8, and 12: 2001

	Central city	Urban fringe/large town	Rural/small town
Grade 4	27 (1.6) 199 (2.3)	44 (2.9) 212 (2.1)	29 (2.8) 215 (2.0)
Grade 8	27 (2.0) 255 (2.0)	45 (2.8) 265 (1.6)	28 (2.5) 265 (2.0)
Grade 12	26 (2.0) 279 (1.6)	40 (2.8) 288 (1.6)	34 (2.5) 284 (1.0)

The percentage of students is listed first with the corresponding average scale score presented below.
Standard errors of the estimated percentages and scale scores appear in parentheses.
NOTE: Percentages may not add to 100 due to rounding.
SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2001 Geography Assessment.

Table B.17: Data for Figure 3.13 National Achievement-Level Results by Type of Location

Percentage of students within and at or above geography achievement levels by type of school location, grades 4, 8, and 12: 2001

		Below *Basic*	At *Basic*	At *Proficient*	At *Advanced*	At or above *Basic*	At or above *Proficient*
Grade 4	Central city	38 (2.4)	46 (1.8)	14 (1.6)	2 (0.4)	62 (2.4)	16 (1.8)
	Urban fringe/large town	24 (2.1)	53 (1.7)	21 (1.5)	2 (0.6)	76 (2.1)	23 (1.7)
	Rural/small town	19 (2.1)	58 (3.0)	21 (2.4)	2 (0.5)	81 (2.1)	23 (2.4)
Grade 8	Central city	36 (2.2)	39 (1.7)	22 (1.8)	3 (0.7)	64 (2.2)	25 (2.1)
	Urban fringe/large town	22 (1.7)	45 (1.3)	29 (1.5)	4 (0.9)	78 (1.7)	32 (1.8)
	Rural/small town	22 (2.2)	48 (2.0)	27 (2.4)	3 (0.7)	78 (2.2)	30 (2.7)
Grade 12	Central city	37 (2.4)	42 (2.0)	19 (1.8)	1 (0.3)	63 (2.4)	20 (1.9)
	Urban fringe/large town	25 (1.6)	45 (1.6)	28 (1.9)	2 (0.6)	75 (1.6)	30 (2.3)
	Rural/small town	26 (1.5)	52 (1.5)	21 (1.4)	1 (0.3)	74 (1.5)	22 (1.4)

Standard errors of the estimated percentages appear in parentheses.
NOTE: Percentages within each geography achievement-level range may not add to 100, or to the exact percentages at or above achievement levels, due to rounding.
SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2001 Geography Assessment.

Table B.18: Data for Table 3.2 National Scale Score Results by Free/Reduced-Price School Lunch Program Eligibility

Percentage of students and average geography scale scores by student eligibility for Free/Reduced-Price School Lunch program, grades 4, 8, and 12: 2001

	Eligible	Not eligible	Info not available
Grade 4	33 (1.4)	48 (2.3)	18 (2.4)
	186 (1.7)	221 (1.2)	218 (2.5)
Grade 8	25 (1.1)	53 (2.1)	22 (2.3)
	242 (1.4)	270 (1.1)	266 (1.8)
Grade 12	16 (1.0)	64 (2.2)	21 (2.4)
	269 (1.6)	287 (1.0)	289 (1.5)

The percentage of students is listed first with the corresponding average scale score presented below.
Standard errors of the estimated percentages and scale scores appear in parentheses.
NOTE: Percentages may not add to 100 due to rounding.
SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2001 Geography Assessment.

Table B.19: Data for Figure 3.14 National Achievement-Level Results by Free/Reduced-Price School Lunch Program Eligibility

Percentage of students within and at or above geography achievement levels by student eligibility for the Free/Reduced-Price School Lunch program, grades 4, 8, and 12: 2001

		Below *Basic*	At *Basic*	At *Proficient*	At *Advanced*	At or above *Basic*	At or above *Proficient*
Grade 4	Eligible	49 (2.2)	45 (2.1)	6 (0.9)	# (***)	51 (2.2)	6 (0.9)
	Not eligible	14 (1.1)	56 (1.6)	27 (1.4)	3 (0.6)	86 (1.1)	29 (1.5)
	Info not available	16 (2.5)	57 (2.9)	24 (3.1)	3 (0.8)	84 (2.5)	27 (3.2)
Grade 8	Eligible	50 (1.8)	39 (1.6)	10 (1.1)	1 (0.3)	50 (1.8)	11 (1.2)
	Not eligible	17 (0.9)	46 (1.3)	32 (1.5)	5 (0.8)	83 (0.9)	37 (1.7)
	Info not available	21 (2.1)	46 (2.5)	29 (2.2)	4 (0.9)	79 (2.1)	33 (2.5)
Grade 12	Eligible	49 (2.3)	40 (1.7)	10 (1.5)	# (***)	51 (2.3)	11 (1.6)
	Not eligible	25 (1.2)	49 (1.3)	25 (1.4)	1 (0.4)	75 (1.2)	26 (1.6)
	Info not available	24 (2.0)	45 (1.6)	29 (2.0)	2 (0.4)	76 (2.0)	31 (2.1)

Standard errors of the estimated percentages appear in parentheses.
# Percentage is between 0.0 and 0.5.
(***) Standard error estimates cannot be accurately determined.
NOTE: Percentages within each geography achievement-level range may not add to 100, or to the exact percentages at or above achievement levels, due to rounding.
SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2001 Geography Assessment.

Table B.20: Data for Table 4.1 Teachers' Majors/Minors

Percentage of students and average geography scale scores by teachers' reported undergraduate/graduate major and minor/special emphasis, grades 4 and 8: 2001

Did you have a major, minor, or special emphasis in any of the following subjects as part of your ***undergraduate*** *or* ***graduate*** *course work?*	Yes	No
Grade 4		
Geography or Geography Education	7 (1.0)	93 (1.0)
	204 (5.2)	210 (1.1)
History or History Education	15 (1.5)	85 (1.5)
	206 (3.6)	211 (1.1)
Social Science or Social Studies Education	20 (1.7)	80 (1.7)
	208 (2.6)	210 (1.3)
Other Social Science	57 (2.5)	43 (2.5)
	210 (1.6)	209 (1.4)
Elementary Education	93 (1.0)	7 (1.0)
	211 (1.1)	197 (4.3)
Grade 8		
Geography or Geography Education	28 (2.5)	72 (2.5)
	263 (2.1)	263 (1.2)
History or History Education	71 (2.7)	29 (2.7)
	263 (1.3)	261 (1.9)
Social Science or Social Studies Education	55 (3.0)	45 (3.0)
	263 (1.3)	262 (1.5)
Other Social Science	51 (2.1)	49 (2.1)
	261 (1.5)	264 (1.4)

The percentage of students is listed first with the corresponding average scale score presented below.
Standard errors of the estimated percentages and scale scores appear in parentheses.
NOTE: Percentages may not add to 100 due to rounding.
SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2001 Geography Assessment.

Table B.21: Data for Table 4.2 Teachers' Preparedness to Teach Geography

Percentage of students and average geography scale scores by teachers' reports on how well prepared they felt they were to teach geography, grades 4 and 8: 1994 and 2001

Regardless or whether you are currently teaching the topic, how well prepared do you feel you are to teach geography at the elementary/middle school level?	1994	2001
Grade 4		
Very prepared	23 (2.0) 209 (2.1)	31 (2.1) * 211 (2.1)
Adequately prepared	57 (2.0) 206 (1.8)	53 (2.3) 210 (1.3)
Somewhat prepared	18 (1.8) 207 (2.8)	15 (1.5) 206 (2.4)
Unprepared	2 (0.5) 200 (8.9) !	1 (0.3) 209 (8.6) !
Grade 8		
Very prepared	36 (2.9) 260 (2.2)	44 (2.5) 263 (1.4)
Adequately prepared	48 (3.6) 262 (1.4)	43 (2.4) 262 (1.3)
Somewhat prepared	13 (2.3) 265 (2.9)	11 (1.7) 261 (2.5)
Unprepared	2 (***) 260 (3.7) !	2 (0.6) 264 (8.9) !

The percentage of students is listed first with the corresponding average scale score presented below.
Standard errors of the estimated percentages and scale scores appear in parentheses.
! The nature of the sample does not allow accurate determination of the variability of the statistic.
* Significantly different from 1994.
(***) Standard error estimates cannot be accurately determined.
NOTE: Percentages may not add to 100 due to rounding.
SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and 2001 Geography Assessments.

Table B.22: Data for Table 4.3 Frequency of Instruction in Fourth-Grade Geography Skills and Topics

Percentage of students and average geography scale scores by teachers' reports on frequency of instruction of selected skills and topics, grade 4:1994 and 2001

How often do you teach the following skills and topics as a part of geography instruction with this class?	1994	2001
Using maps and globes		
Almost every day	29 (2.3) 210 (2.1)	28 (2.3) 213 (1.9)
Once or twice a week	54 (2.5) 208 (1.7)	47 (2.2) 209 (1.5)
Once or twice a month	17 (2.1) 199 (3.2)	22 (1.7) 206 (2.4)
Never or hardly ever	1 (0.3) *** (***)	3 (0.7) 209 (8.9) !
Natural resources		
Almost every day	9 (1.8) 201 (4.1)	9 (1.4) 217 (4.6)
Once or twice a week	38 (2.5) 209 (2.3)	31 (1.6) * 208 (1.9)
Once or twice a month	44 (2.5) 208 (2.2)	46 (1.9) 210 (1.7)
Never or hardly ever	9 (1.4) 198 (4.8)	14 (1.4) * 208 (3.1)
Foreign countries and cultures		
Almost every day	6 (1.2) 206 (5.7)	3 (0.8) 206 (6.3) !
Once or twice a week	19 (1.9) 203 (2.7)	23 (1.7) 208 (2.3)
Once or twice a month	43 (2.1) 208 (2.0)	45 (2.7) 209 (1.4)
Never or hardly ever	32 (2.3) 209 (1.9)	29 (2.4) 212 (2.2)
Environmental issues		
Almost every day	4 (0.9) 201 (5.6) !	7 (1.5) 212 (3.6) !
Once or twice a week	27 (2.1) 206 (2.5)	21 (1.7) 205 (2.6)
Once or twice a month	56 (2.0) 208 (2.0)	56 (2.2) 211 (1.4)
Never or hardly ever	13 (1.5) 208 (3.9)	16 (1.9) 211 (3.0)

The percentage of students is listed first with the corresponding average scale score presented below.
Standard errors of the estimated percentages and scale scores appear in parentheses.
! The nature of the sample does not allow accurate determination of the variability of the statistic.
* Significantly different from 1994.
*** (***) Sample size is insufficient to permit a reliable estimate.
NOTE: Percentages may not add to 100 due to rounding.
SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and 2001 Geography Assessments.

Table B.23a: Data for Table 4.4a Frequency of Instruction in Eighth-Grade Geography Skills and Topics

Percentage of students and average geography scale scores by students' reports on frequency of instruction of selected skills and topics, grade 8 : 1994 and 2001

How often have you studied the following geography skills and topics in school?	1994	2001
Using maps and globes		
Almost every day	9 (0.6) 261 (1.7)	12 (0.7) * 259 (1.7)
Once or twice a week	30 (0.9) 264 (1.1)	34 (0.7) * 264 (1.1)
Once or twice a month	33 (0.9) 263 (1.1)	33 (0.7) 268 (1.2)
Never or hardly ever	28 (1.0) 253 (1.0)	21 (0.7) * 258 (1.2)
Natural resources		
Almost every day	9 (0.4) 251 (1.7)	9 (0.5) 249 (1.5)
Once or twice a week	21 (0.8) 259 (1.2)	24 (0.6) * 262 (1.3)
Once or twice a month	36 (0.8) 265 (1.0)	35 (0.6) 269 (1.1)
Never or hardly ever	34 (1.1) 260 (0.9)	32 (0.8) 263 (1.2)
Countries and cultures		
Almost every day	23 (0.8) 260 (1.2)	31 (1.0) * 264 (1.1)
Once or twice a week	29 (1.0) 261 (1.1)	32 (0.7) * 266 (1.2)
Once or twice a month	28 (0.9) 264 (1.2)	24 (0.6) * 263 (1.2)
Never or hardly ever	20 (0.7) 256 (1.3)	13 (0.6) * 254 (1.6)
Environmental issues		
Almost every day	12 (0.7) 258 (1.7)	11 (0.5) 254 (1.7)
Once or twice a week	21 (0.6) 260 (1.2)	24 (0.8) * 265 (0.9)
Once or twice a month	33 (0.8) 263 (1.1)	33 (0.7) 267 (1.2)
Never or hardly ever	34 (1.0) 260 (0.9)	32 (1.0) 262 (1.3)

The percentage of students is listed first with the corresponding average scale score presented below.
Standard errors of the estimated percentages and scale scores appear in parentheses.
* Significantly different from 1994.
NOTE: Percentages may not add to 100 due to rounding.
SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and 2001 Geography Assessments.

Table B.23b: Data for Table 4.4b Frequency of Instruction in Twelfth-Grade Geography Skills and Topics

Percentage of students and average geography scale scores by students' reports on frequency of instruction of selected skills and topics, grade 12: 1994 and 2001

How often have you studied the following geography skills and topics in school?	1994	2001
Using maps and globes		
Almost every day	7 (0.4)	6 (0.4)
	284 (2.0)	277 (1.5)
Once or twice a week	22 (0.7)	24 (0.5)
	288 (0.9)	285 (1.1)
Once or twice a month	31 (0.7)	34 (0.6) *
	286 (0.8)	287 (0.9)
Never or hardly ever	40 (0.9)	36 (0.8) *
	283 (1.1)	284 (1.0)
Natural resources		
Almost every day	7 (0.4)	7 (0.4)
	282 (2.1)	275 (1.7)
Once or twice a week	18 (0.6)	22 (0.8) *
	286 (1.2)	283 (1.2)
Once or twice a month	31 (0.7)	32 (0.7)
	288 (1.0)	288 (0.9)
Never or hardly ever	45 (0.9)	39 (0.8) *
	284 (0.9)	285 (1.0)
Countries and cultures		
Almost every day	16 (0.6)	20 (0.5) *
	287 (1.3)	286 (0.9)
Once or twice a week	26 (0.5)	32 (0.6) *
	288 (1.0)	288 (1.0)
Once or twice a month	30 (0.7)	29 (0.6)
	286 (0.8)	286 (1.2)
Never or hardly ever	28 (0.8)	19 (0.5) *
	280 (1.0)	277 (1.0)
Environmental issues		
Almost every day	11 (0.5)	11 (0.5)
	284 (1.6)	279 (1.3)
Once or twice a week	22 (0.7)	26 (0.7) *
	288 (1.2)	286 (1.1)
Once or twice a month	30 (0.7)	33 (0.6) *
	288 (0.9)	289 (1.1)
Never or hardly ever	37 (0.8)	30 (0.6) *
	282 (0.9)	282 (0.9)

The percentage of students is listed first with the corresponding average scale score presented below.
Standard errors of the estimated percentages and scale scores appear in parentheses.
* Significantly different from 1994.
NOTE: Percentages may not add to 100 due to rounding.
SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and 2001 Geography Assessments.

Table B.24: Data for Table 4.5 Eighth-Grade Frequency of Geography Course Taking

Percentage of students and average geography scale scores by students' reports on grades in which geography was taken since the 6th grade, grade 8: 1994 and 2001

Did you take or do you expect to take a geography course in 6th, 7th, or 8th grade?	1994	2001
Number of grades selected		
None	18 (1.0)	12 (0.7)*
	250 (1.6)	255 (1.7)
One	30 (0.7)	20 (0.6)*
	257 (1.1)	256 (1.5)
Two	14 (0.9)	16 (0.6)
	269 (1.4)	263 (1.3)
Three	26 (0.9)	43 (1.1)*
	274 (0.9)	272 (1.1)
Don't know	13 (0.6)	9 (0.5)
	243 (1.5)	246 (1.5)

The percentage of students is listed first with the corresponding average scale score presented below.

Standard errors of the estimated percentages and scale scores appear in parentheses.

* Significantly different from 1994.

NOTE: Percentages may not add to 100 due to rounding.

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and 2001 Geography Assessments.

Table B.25: Data for Table 4.6 Twelfth-Grade Frequency of Geography Course Taking

Percentage of students and average geography scale scores by students' reports on grades in which geography was taken since 9th grade, grade 12: 1994 and 2001

Did you take or do you expect to take a geography course in 9th, 10th, 11th, or 12th grade?	1994	2001
Number of grades selected		
None	31 (1.6)	21 (1.2)*
	286 (1.4)	289 (1.3)
One	35 (1.4)	32 (1.4)
	288 (0.9)	288 (1.2)
Two	16 (0.8)	15 (0.7)
	286 (1.5)	285 (1.3)
Three	10 (0.6)	18 (0.9)*
	281 (1.7)	280 (1.1)
Four	5 (0.5)	10 (0.6)*
	277 (2.5)	281 (1.3)
Don't know	3 (0.4)	3 (0.3)
	268 (2.1)	265 (2.6)

The percentage of students is listed first with the corresponding average scale score presented below.
Standard errors of the estimated percentages and scale scores appear in parentheses.
* Significantly different from 1994.
NOTE: Percentages may not add to 100 due to rounding.
SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and 2001 Geography Assessments.

Table B.26a: Data for Table 4.7a Fourth-Grade Computer Use

Percentage of students and average geography scale scores by teachers' reports on computer use for social studies instruction, grade 4: 2001

When students in this class work on social studies, to what extent do they use computers to do each of the following?	2001
Grade 4	
Use CD-ROM to look up reference works	
Not at all	37 (2.5) 205 (2.0)
Small extent	47 (2.4) 211 (1.6)
Moderate extent	14 (1.8) 216 (2.4)
Large extent	2 (0.9) 214 (7.9) !
Retrieve information through the Internet	
Not at all	34 (2.3) 203 (2.3)
Small extent	45 (2.3) 212 (1.6)
Moderate extent	17 (2.2) 216 (3.0)
Large extent	4 (1.1) 211 (6.3) !
Use exploration/simulation software	
Not at all	54 (2.4) 207 (1.4)
Small extent	37 (2.4) 213 (1.7)
Moderate extent	8 (1.2) 211 (3.7)
Large extent	1 (0.2) *** (***)
Organize information using spreadsheets/databases	
Not at all	89 (1.4) 209 (1.2)
Small extent	9 (1.3) 213 (3.7)
Moderate extent	1 (0.4) 213 (8.5) !
Large extent	# (0.2) *** (***)

The percentage of students is listed first with the corresponding average scale score presented below.
Standard errors of the estimated percentages and scale scores appear in parentheses.
# Percentage is between 0.0 and 0.5.
! The nature of the sample does not allow accurate determination of the variability of the statistic.
*** (***) Sample size is insufficient to permit a reliable estimate.
NOTE: Percentages may not add to 100 due to rounding.
SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2001 Geography Assessment.

Table B.26b: Data for Table 4.7b Eighth-Grade Computer Use

Percentage of students and average geography scale scores by teachers' reports on computer use for social studies instruction, grade 8: 2001

When students in this class work on social studies, to what extent do they use computers to do each of the following? **Grade 8**	2001
Use CD-ROM to look up reference works	
Not at all	31 (2.0) 258 (1.3)
Small extent	48 (2.3) 263 (1.4)
Moderate extent	17 (2.4) 266 (2.4)
Large extent	4 (0.9) 268 (4.7) !
Retrieve information through the Internet	
Not at all	20 (1.9) 255 (2.0)
Small extent	47 (2.4) 261 (1.3)
Moderate extent	29 (2.6) 266 (1.9)
Large extent	4 (0.8) 273 (3.8)
Use exploration/simulation software	
Not at all	62 (2.2) 261 (1.2)
Small extent	32 (2.3) 265 (1.9)
Moderate extent	5 (1.1) 259 (3.4) !
Large extent	1 (0.4) 257 (11.0) !
Organize information using spreadsheets/databases	
Not at all	74 (2.7) 261 (1.2)
Small extent	22 (2.7) 266 (2.4)
Moderate extent	2 (0.8) 262 (6.2) !
Large extent	1 (0.5) 249 (5.5) !

The percentage of students is listed first with the corresponding average scale score presented below.
Standard errors of the estimated percentages and scale scores appear in parentheses.
! The nature of the sample does not allow accurate determination of the variability of the statistic.
NOTE: Percentages may not add to 100 due to rounding.
SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2001 Geography Assessment.

Table B.27: Data for Table 4.8 Twelfth-Grade Computer Use

Percentage of students and average geography scale scores by students' reports on computer use for history and geography, grade 12: 2001

Think about all the courses since the 9th grade in which you have studied history or geography. To what extent have you used computers to do the following? For this question include both work in class and homework assignments.	2001
Research projects using a CD or the Internet	
Not at all	26 (0.8) 274 (1.0)
Small extent	32 (0.5) 285 (1.0)
Moderate extent	29 (0.7) 290 (1.1)
Large extent	13 (0.6) 292 (1.3)
Use exploration/simulation software	
Not at all	66 (0.7) 287 (0.8)
Small extent	23 (0.5) 281 (1.1)
Moderate extent	9 (0.4) 276 (1.4)
Large extent	2 (0.2) 278 (3.3)
Tables, charts or graphs on the computer	
Not at all	55 (0.9) 284 (0.7)
Small extent	30 (0.7) 288 (1.2)
Moderate extent	12 (0.5) 281 (1.6)
Large extent	4 (0.3) 277 (2.7)

The percentage of students is listed first with the corresponding average scale score presented below.
Standard errors of the estimated percentages and scale scores appear in parentheses.
NOTE: Percentages may not add to 100 due to rounding.
SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2001 Geography Assessment.

Table B.28: Data for Table 4.9 How Much Eighth- and Twelfth-Grade Students Like Geography

Percentage of students and average geography scale scores by students' reports on how much they like studying geography, grades 8 and 12: 1994 and 2001

How much do you like studying geography?	1994	2001
Grade 8		
One of my favorite subjects	19 (0.8)	20 (0.6)
	274 (1.2)	275 (1.3)
Like other subjects better	67 (0.9)	69 (0.6)
	260 (0.7)	263 (1.0)
Never studied geography	14 (0.6)	11 (0.5) *
	241 (1.9)	247 (1.7)
Grade 12		
One of my favorite subjects	14 (0.6)	15 (0.6)
	297 (1.3)	293 (1.2)
Like other subjects better	63 (1.1)	72 (0.8) *
	285 (0.8)	285 (0.8)
Never studied geography	23 (1.2)	13 (0.8) *
	277 (1.3)	278 (1.8)

The percentage of students is listed first with the corresponding average scale score presented below.
Standard errors of the estimated percentages and scale scores appear in parentheses.
* Significantly different from 1994.
NOTE: Percentages may not add to 100 due to rounding.
SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and 2001 Geography Assessments.

Table B.29: Data for Table 5.1 Comparison of Two Sets of National Scale Score Results

National average geography scale scores by type of results, grades 4, 8, and 12: 2001

	Accommodations not permitted	Accommodations permitted
Grade 4	209 (1.0)	208 (0.9)
Grade 8	262 (0.9)	260 (1.0) †
Grade 12	285 (0.8)	284 (0.8)

Standard errors of the estimated scale scores appear in parentheses.

† Significantly different from the sample where accommodations were not permitted.

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2001 Geography Assessment.

Table B.30: Data for Table 5.2 Comparison of Two Sets of National Achievement-Level Results

Percentage of students within and at or above geography achievement levels by type of results, grades 4, 8, and 12: 2001

	Below *Basic*	At *Basic*	At *Proficient*	At *Advanced*	At or above *Basic*	At or above *Proficient*
Grade 4						
Accommodations were not permitted	26 (1.2)	53 (1.4)	19 (1.1)	2 (0.3)	74 (1.2)	21 (1.0)
Accommodations were permitted	27 (1.0)	52 (1.1)	19 (0.9)	2 (0.3)	73 (1.0)	20 (0.9)
Grade 8						
Accommodations were not permitted	26 (0.9)	44 (0.9)	26 (1.1)	4 (0.6)	74 (0.9)	30 (1.2)
Accommodations were permitted	28 (1.2) †	43 (0.9)	25 (1.0)	4 (0.5)	72 (1.2) †	29 (1.3)
Grade 12						
Accommodations were not permitted	29 (0.9)	47 (0.9)	23 (1.0)	1 (0.3)	71 (0.9)	25 (1.1)
Accommodations were permitted	29 (1.0)	47 (0.9)	23 (1.0)	1 (0.3)	71 (1.0)	24 (1.2)

Standard errors of the estimated percentages appear in parentheses.

† Significantly different from the sample where accommodations were not permitted.

NOTE: Percentages within each geography achievement-level range may not add to 100, or to the exact percentages at or above achievement levels, due to rounding.

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2001 Geography Assessment.

Table B.31: Data for Table 5.3 Comparison of Two Sets of National Scale Score Results by Gender

National average geography scale scores by gender and type of results, grades 4, 8, and 12: 2001

	Male	Female
Grade 4		
Accommodations were not permitted	212 (1.1)	207 (1.2)
Accommodations were permitted	210 (1.0)	206 (1.3)
Grade 8		
Accommodations were not permitted	264 (1.0)	260 (1.1)
Accommodations were permitted	262 (1.2) †	258 (1.0)
Grade 12		
Accommodations were not permitted	287 (0.9)	282 (0.8)
Accommodations were permitted	287 (1.0)	281 (0.8)

Standard errors of the estimated scale scores appear in parentheses.

† Significantly different from the sample where accommodations were not permitted.

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2001 Geography Assessment.

Table B.32: Table 5.4 Comparison of Two Sets of National Achievement-Level Results by Gender

Percentage of students within and at or above geography achievement levels by gender and type of results, grades 4, 8, and 12: 2001

	Below *Basic*	At *Basic*	At *Proficient*	At *Advanced*	At or above *Basic*	At or above *Proficient*
Grade 4						
Male						
Accommodations were not permitted	25 (1.3)	51 (1.6)	21 (1.4)	3 (0.5)	75 (1.3)	24 (1.4)
Accommodations were permitted	26 (0.9)	51 (1.3)	21 (1.1)	3 (0.5)	74 (0.9)	23 (1.2)
Female						
Accommodations were not permitted	28 (1.6)	54 (1.7)	17 (1.2)	1 (0.4)	72 (1.6)	18 (1.1)
Accommodations were permitted	29 (1.5)	54 (1.5)	16 (1.3)	1 (0.3)	71 (1.5)	18 (1.3)
Grade 8						
Male						
Accommodations were not permitted	25 (1.0)	42 (1.3)	29 (1.7)	5 (0.7)	75 (1.0)	33 (1.5)
Accommodations were permitted	27 (1.5)	41 (1.0)	27 (1.2)	4 (0.7)	73 (1.5)	32 (1.5)
Female						
Accommodations were not permitted	27 (1.2)	47 (1.1)	24 (1.3)	3 (0.6)	73 (1.2)	26 (1.4)
Accommodations were permitted	29 (1.1)	45 (1.5)	23 (1.4)	3 (0.5)	71 (1.1)	26 (1.5)
Grade 12						
Male						
Accommodations were not permitted	27 (1.1)	45 (1.3)	26 (1.4)	2 (0.4)	73 (1.1)	28 (1.5)
Accommodations were permitted	26 (1.3)	45 (1.4)	26 (1.4)	2 (0.4)	74 (1.3)	28 (1.6)
Female						
Accommodations were not permitted	30 (1.0)	48 (1.0)	20 (0.9)	1 (0.3)	70 (1.0)	21 (1.0)
Accommodations were permitted	32 (1.2)	48 (1.2)	19 (1.2)	1 (0.3)	68 (1.2)	20 (1.2)

Standard errors of the estimated percentages appear in parentheses.

NOTE: Percentages within each geography achievement-leve range may not add to 100, or to the exact percentages at or above achievement levels, due to rounding.

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2001 Geography Assessment.

Table B.33: Data for Table 5.5 Comparison of Two Sets of National Scale Score Results by Race/Ethnicity

National average geography scale scores by race/ethnicity and type of results, grades 4, 8, and 12: 2001

	White	Black	Hispanic	Asian/Pacific Islander	American Indian
Grade 4					
Accommodations were not permitted	222 (1.0)	181 (1.8)	184 (2.8)	212 (2.7)	199 (3.6)
Accommodations were permitted	220 (1.0)	181 (1.9)	185 (2.1)	216 (2.6)	199 (3.4)
Grade 8					
Accommodations were not permitted	273 (1.0)	234 (1.7)	240 (1.7)	266 (2.5)	261 (5.8)
Accommodations were permitted	271 (1.4)	232 (1.6)	238 (1.8)	267 (2.2)	259 (4.9)
Grade 12					
Accommodations were not permitted	291 (0.9)	260 (1.4)	270 (1.5)	286 (2.9)	288 (3.6) !
Accommodations were permitted	292 (0.8)	258 (1.5)	269 (1.4)	285 (5.0)	286 (3.5) !

Standard errors of the estimated scale scores appear in parentheses.

! The nature of the sample does not allow accurate determination of the variability of the statistic.

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2001 Geography Assessment.

Table B.34: Data for Table 5.6 Comparison of Two Sets of National Achievement-Level Results by Race/Ethnicity

Percentage of students within and at or above geography achievement levels by race/ethnicity and type of results, grades 4, 8, and 12: 2001

	Below *Basic*	At *Basic*	At *Proficient*	At *Advanced*	At or above *Basic*	At or above *Proficient*
Grade 4						
White						
Accommodations were not permitted	13 (1.3)	58 (1.8)	26 (1.6)	3 (0.5)	87 (1.3)	29 (1.5)
Accommodations were permitted	15 (1.0)	57 (1.4)	25 (1.3)	3 (0.5)	85 (1.0)	28 (1.3)
Black						
Accommodations were not permitted	56 (2.1)	39 (2.1)	5 (0.8)	# (***)	44 (2.1)	5 (0.9)
Accommodations were permitted	56 (2.7)	40 (2.6)	4 (0.5)	# (***)	44 (2.7)	4 (0.6)
Hispanic						
Accommodations were not permitted	51 (3.0)	43 (2.5)	6 (1.0)	# (***)	49 (3.0)	6 (1.0)
Accommodations were permitted	49 (2.5)	45 (2.1)	5 (0.9)	# (***)	51 (2.5)	6 (0.9)
Asian/Pacific Islander						
Accommodations were not permitted	23 (3.4)	52 (4.4)	23 (3.1)	1 (0.9)	77 (3.4)	25 (3.0)
Accommodations were permitted	18 (3.4)	57 (4.0)	24 (3.9)	2 (0.8)	82 (3.4)	25 (3.7)
American Indian						
Accommodations were not permitted	34 (4.9)	53 (6.3)	13 (4.2)	# (***)	66 (4.9)	13 (4.1)
Accommodations were permitted	37 (5.7)	51 (5.7)	12 (3.1)	# (***)	63 (5.7)	12 (3.3)
Grade 8						
White						
Accommodations were not permitted	14 (0.9)	48 (1.2)	34 (1.5)	5 (0.8)	86 (0.9)	39 (1.7)
Accommodations were permitted	16 (1.5)	46 (1.2)	33 (1.5)	5 (0.7)	84 (1.5)	38 (1.9)
Black						
Accommodations were not permitted	60 (2.3)	34 (1.9)	6 (0.8)	# (***)	40 (2.3)	6 (0.8)
Accommodations were permitted	62 (2.5)	32 (2.2)	6 (0.9)	# (***)	38 (2.5)	6 (1.1)
Hispanic						
Accommodations were not permitted	52 (1.9)	38 (1.6)	9 (1.1)	1 (0.2)	48 (1.9)	10 (1.0)
Accommodations were permitted	54 (2.3)	37 (1.9)	9 (0.8)	1 (0.2)	46 (2.3)	9 (0.8)
Asian/Pacific Islander						
Accommodations were not permitted	21 (3.4)	47 (4.8)	28 (3.5)	4 (1.8)	79 (3.4)	32 (3.2)
Accommodations were permitted	20 (2.7)	49 (2.9)	28 (3.1)	4 (1.4)	80 (2.7)	32 (3.0)
American Indian						
Accommodations were not permitted	28 (6.8)	41 (11.1)	29 (8.9)	3 (***)	72 (6.8)	31 (11.2)
Accommodations were permitted	30 (5.2)	46 (5.9)	21 (6.0)	3 (***)	70 (5.2)	24 (7.2)
Grade 12						
White						
Accommodations were not permitted	19 (0.9)	51 (1.1)	29 (1.2)	2 (0.4)	81 (0.9)	31 (1.4)
Accommodations were permitted	19 (0.9)	51 (1.1)	29 (1.3)	2 (0.4)	81 (0.9)	31 (1.4)
Black						
Accommodations were not permitted	65 (2.3)	31 (2.1)	4 (0.7)	# (***)	35 (2.3)	4 (0.7)
Accommodations were permitted	67 (2.0)	30 (1.8)	3 (0.9)	# (***)	33 (2.0)	3 (0.9)
Hispanic						
Accommodations were not permitted	48 (2.6)	42 (2.5)	10 (1.4)	# (0.1)	52 (2.6)	10 (1.4)
Accommodations were permitted	50 (2.4)	42 (2.2)	9 (1.1)	# (***)	50 (2.4)	9 (1.1)
Asian/Pacific Islander						
Accommodations were not permitted	28 (4.3)	45 (3.0)	25 (4.6)	1 (0.7)	72 (4.3)	26 (4.7)
Accommodations were permitted	29 (6.1)	46 (2.6)	23 (5.0)	1 (0.9)	71 (6.1)	25 (5.6)
American Indian						
Accommodations were not permitted	26 (6.0) !	41 (7.0) !	31 (5.3) !	1 (***)	74 (6.0) !	32 (4.9) !
Accommodations were permitted	29 (7.6) !	41 (7.6) !	29 (6.9) !	1 (***)	71 (7.6) !	30 (6.9) !

Standard errors of the estimated percentages appear in parentheses.

# Percentage is between 0.0 and 0.5.

(***) Standard error estimates cannot be accurately determined.

! The nature of the sample does not allow accurate determination of the variability of the statistic.

NOTE: Percentages within each geography achievement-level range may not add to 100, or to the exact percentages at or above achievement levels, due to rounding.

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2001 Geography Assessment.

Table B.35: Data for Table 6.1 Grade 4 Sample Question 1 Results (Multiple-Choice)

Overall percentage correct and percentages correct within each achievement-level range: 2001

Grade 4	Percentage correct within achievement-level intervals			
Overall percentage correct	Below ***Basic*** **186 and below***	***Basic*** **187–239***	***Proficient*** **240–275***	***Advanced*** **276 and above***
70 (1.4)	50 (2.8)	74 (1.7)	84 (2.5)	*** (***)

Standard errors of the estimated percentages appear in parentheses.
*NAEP geography composite scale range.
***(***)Sample size is insufficient to permit a reliable estimate (see appendix A).
SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2001 Geography Assessment.

Table B.36: Data for Table 6.2 Grade 4 Sample Question 2 Results (Multiple-Choice)

Overall percentage correct and percentages correct within each achievement-level range: 2001

Grade 4	Percentage correct within achievement-level intervals			
Overall percentage correct	Below ***Basic*** **186 and below***	***Basic*** **187–239***	***Proficient*** **240–275***	***Advanced*** **276 and above***
33 (1.1)	22 (1.8)	28 (1.8)	56 (3.2)	*** (***)

Standard errors of the estimated percentages appear in parentheses.
*NAEP geography composite scale range.
***(***)Sample size is insufficient to permit a reliable estimate (see appendix A).
SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2001 Geography Assessment.

Table B.37: Data for Table 6.3a Grade 4 Sample Question 3 Results ("Complete" Short Constructed-Response)

Overall percentage "Complete" and percentages "Complete" within each achievement-level range: 2001

Grade 4	Percentage "Complete" within achievement-level intervals			
Overall percentage "Complete"	Below ***Basic*** **186 and below***	***Basic*** **187–239***	***Proficient*** **240–275***	***Advanced*** **276 and above***
66 (1.4)	38 (2.3)	71 (2.0)	88 (2.3)	*** (***)

Standard errors of the estimated percentages appear in parentheses.
*NAEP geography composite scale range.
***(***) Sample size is insufficient to permit a reliable estimate (see appendix A).
SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2001 Geography Assessment.

Table B.38: Data for Table 6.3b Grade 4 Sample Question 3 Results ("Partial" Short Constructed-Response)

Overall percentage "Partial" or better and percentages "Partial" or better within each achievement-level range: 2001

Grade 4	Percentage "Partial" or better within achievement-level intervals			
Overall percentage "Partial" or better	Below ***Basic*** **186 and below***	***Basic*** **187–239***	***Proficient*** **240–275***	***Advanced*** **276 and above***
72 (1.4)	43 (2.5)	78 (1.8)	93 (2.3)	*** (***)

Standard errors of the estimated percentages appear in parentheses.
*NAEP geography composite scale range.
*** (***) Sample size is insufficient to permit a reliable estimate (see appendix A).
SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2001 Geography Assessment.

Table B.39: Data for Table 6.4a Grade 4 Sample Question 4 Results ("Complete" Extended Constructed-Response)

Overall percentage "Complete" and percentages "Complete" within each achievement-level range: 2001

Grade 4	Percentage "Complete" within achievement-level intervals			
Overall percentage "Complete" or better	**Below *Basic* 186 and below***	***Basic* 187–239***	***Proficient* 240–275***	***Advanced* 276 and above***
11 (0.8)	0 (***)	6 (1.2)	32 (3.4)	*** (***)

Standard errors of the estimated percentages appear in parentheses.
*NAEP geography composite scale range.
*** (***) Sample size is insufficient to permit a reliable estimate (see appendix A).
SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2001 Geography Assessment.

Table B.40: Data for Table 6.4b Grade 4 Sample Question 4 Results ("Essential" Extended Constructed-Response)

Overall percentage "Essential" or better and percentages "Essential" or better within each achievement-level range: 2001

Grade 4	Percentage "Essential" or better within achievement-level intervals			
Overall percentage "Essential" or better	**Below *Basic* 186 and below***	***Basic* 187–239***	***Proficient* 240–275***	***Advanced* 276 and above***
28 (1.3)	1 (0.6)	25 (2.1)	65 (3.8)	*** (***)

Standard errors of the estimated percentages appear in parentheses.
*NAEP geography composite scale range.
***(***) Sample size is insufficient to permit a reliable estimate (see appendix A).
SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2001 Geography Assessment.

Table B.41: Data for Table 6.4c Grade 4 Sample Question 4 Results ("Partial" Extended Constructed-Response)

Overall percentage "Partial" or better and percentages "Partial" or better within each achievement-level range: 2001

Grade 4	Percentage "Partial" or better within achievement-level intervals			
Overall percentage "Partial" or better	**Below *Basic* 186 and below***	***Basic* 187–239***	***Proficient* 240–275***	***Advanced* 276 and above***
38 (1.3)	4 (1.5)	36 (2.2)	78 (2.5)	*** (***)

Standard errors of the estimated percentages appear in parentheses.
*NAEP geography composite scale range.
*** (***) Sample size is insufficient to permit a reliable estimate (see appendix A).
SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2001 Geography Assessment.

Table B.42: Data for Table 6.5 Grade 8 Sample Question 5 Results (Multiple-Choice)

Overall percentage correct and percentages correct within each achievement-level range: 2001

Grade 8	Percentage correct within achievement-level intervals			
Overall percentage correct	Below ***Basic*** **241 and below***	***Basic*** **242–281***	***Proficient*** **282–314***	***Advanced*** **315 and above***
70 (1.2)	37 (2.3)	74 (1.7)	91 (1.5)	97 (***)

Standard errors of the estimated percentages appear in parentheses.
*NAEP geography composite scale range.
(***) Standard error estimates cannot be accurately determined.
SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2001 Geography Assessment.

Table B.43: Data for Table 6.6 Grade 8 Sample Question 6 Results (Multiple-Choice)

Overall percentage correct and percentages correct within each achievement-level range: 2001

Grade 8	Percentage correct within achievement-level intervals			
Overall percentage correct	Below ***Basic*** **241 and below***	***Basic*** **242–281***	***Proficient*** **282–314***	***Advanced*** **315 and above***
50 (1.3)	36 (2.2)	47 (2.3)	64 (3.1)	*** (***)

Standard errors of the estimated percentages appear in parentheses.
*NAEP geography composite scale range.
***(***) Sample size is insufficient to permit a reliable estimate (see appendix A).
SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2001 Geography Assessment.

Table B.44: Data for Table 6.7 Grade 8 Sample Question 7 Results (Multiple-Choice)

Overall percentage correct and percentages correct within each achievement-level range: 2001

Grade 8	Percentage correct within achievement-level intervals			
Overall percentage correct	Below ***Basic*** **241 and below***	***Basic*** **242–281***	***Proficient*** **282–314***	***Advanced*** **315 and above***
74 (1.4)	40 (2.3)	80 (2.0)	93 (1.9)	100 (***)

Standard errors of the estimated percentages appear in parentheses.
*NAEP geography composite scale range.
(***) Standard error estimates cannot be accuratlely determined.
SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2001 Geography Assessment.

Table B.45: Data for Table 6.8 Grade 8 Sample Question 8 Results (Multiple-Choice)

Overall percentage correct and percentages correct within each achievement-level range: 2001

Grade 8	Percentage correct within achievement-level intervals			
Overall percentage correct	Below ***Basic*** **241 and below***	***Basic*** **242–281***	***Proficient*** **282–314***	***Advanced*** **315 and above***
60 (1.4)	40 (2.6)	57 (2.0)	79 (2.7)	96 (1.7)

Standard errors of the estimated percentages appear in parentheses.
*NAEP geography composite scale range.
SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2001 Geography Assessment.

Table B.46: Data for Table 6.9a Grade 8 Sample Question 9 Results ("Complete" Short Constructed-Response)

Overall percentage "Complete" and percentages "Complete" within each achievement-level range: 2001

Grade 8	Percentage "Complete" within achievement-level intervals			
Overall percentage "Complete"	Below ***Basic*** **241 and below***	***Basic*** **242–281***	***Proficient*** **282–314***	***Advanced*** **315 and above***
22 (1.4)	6 (2.1)	18 (1.9)	38 (2.7)	*** (***)

Standard errors of the estimated percentages appear in parentheses.
*NAEP geography composite scale range.
***(***) Sample size is insufficient to permit a reliable estimate (see appendix A).
SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2001 Geography Assessment.

Table B.47: Data for Table 6.9b Grade 8 Sample Question 9 Results ("Partial" Short Constructed-Response)

Overall percentage "Partial" or better and percentages "Partial" or better within each achievement-level range: 2001

Grade 8	Percentage "Partial" or better within achievement-level intervals			
Overall percentage "Partial" or better	Below ***Basic*** **241 and below***	***Basic*** **242–281***	***Proficient*** **282–314***	***Advanced*** **315 and above***
60 (1.3)	26 (2.5)	62 (2.1)	84 (2.3)	*** (***)

Standard errors of the estimated percentages appear in parentheses.
*NAEP geography composite scale range.
*** (***) Sample size is insufficient to permit a reliable estimate (see appendix A).
SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2001 Geography Assessment.

Table B.48: Data for Table 6.10 Grade 12 Sample Question 10 Results (Multiple-Choice)

Overall percentage correct and percentages correct within each achievement-level range: 2001

Grade 12	Percentage correct within achievement-level intervals			
Overall percentage correct	Below ***Basic*** **269 and below***	***Basic*** **270–304***	***Proficient*** **305–338***	***Advanced*** **339 and above***
78 (1.2)	46 (2.3)	86 (1.6)	99 (***)	*** (***)

Standard errors of the estimated percentages appear in parentheses.
*NAEP geography composite scale range.
(***) Standard error estimates cannot be accurately determined.
***(***)Sample size is insufficient to permit a reliable estimate (see appendix A).
SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2001 Geography Assessment.

Table B.49: Data for Table 6.11 Grade 12 Sample Question 11 Results (Multiple-Choice)

Overall percentage correct and percentages correct within each achievement-level range: 2001

Grade 12	Percentage correct within achievement-level intervals			
Overall percentage correct	Below ***Basic*** **269 and below***	***Basic*** **270–304***	***Proficient*** **305–338***	***Advanced*** **339 and above***
61 (1.4)	46 (2.3)	62 (2.2)	76 (3.3)	*** (***)

Standard errors of the estimated percentages appear in parentheses.
*NAEP geography composite scale range.
***(***) Sample size is insufficient to permit a reliable estimate (see appendix A).
SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2001 Geography Assessment.

Table B.50: Data for Table 6.12a Grade 12 Sample Question 12 Results ("Complete" Short Constructed-Response)

Overall percentage "Complete" and percentages "Complete" within each achievement-level range: 2001

Grade 12	Percentage "Complete" within achievement-level intervals			
Overall percentage "Complete"	Below ***Basic*** **269 and below***	***Basic*** **270–304***	***Proficient*** **305–338***	***Advanced*** **339 and above***
47 (1.3)	17 (1.9)	52 (2.1)	70 (3.2)	*** (***)

Standard errors of the estimated percentages appear in parentheses.
*NAEP Geography composite scale range.
***(***) Sample size is insufficient to permit a reliable estimate (see appendix A).
SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2001 Geography Assessment.

Table B.51 Data for Table 6.12b Grade 12 Sample Question 12 Results ("Partial" Short Constructed-Response)

Overall percentage "Partial" or better and percentages "Partial" or better within each achievement-level range: 2001

Grade 12	Percentage "Partial" or better within achievement-level intervals			
Overall percentage "Partial" or better	Below ***Basic*** **269 and below***	***Basic*** **270–304***	***Proficient*** **305–338***	***Advanced*** **339 and above***
76 (1.2)	42 (2.8)	85 (1.4)	96 (1.4)	*** (***)

Standard errors of the estimated percentages appear in parentheses.
*NAEP Geography composite scale range.
***(***) Sample size is insufficient to permit a reliable estimate (see appendix A).
SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2001 Geography Assessment.

Table B.52: Data for Table 6.13a Grade 12 Sample Question 13 Results ("Complete" Short Constructed-Response)

Overall percentage "Complete" and percentages "Complete" within each achievement-level range: 2001

Grade 12	Percentage "Complete" within achievement-level intervals			
Overall percentage "Complete"	Below ***Basic*** **269 and below***	***Basic*** **270–304***	***Proficient*** **305–338***	***Advanced*** **339 and above***
16 (0.9)	2 (0.9)	15 (1.3)	33 (3.0)	*** (***)

Standard errors of the estimated percentages appear in parentheses.
*NAEP geography composite scale range.
*** (***) Sample size is insufficient to permit a reliable estimate (see appendix A).
SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2001 Geography Assessment.

Table B.53: Data for Table 6.13b Grade 12 Sample Question 13 Results ("Partial" Short Constructed-Response)

Overall percentage "Partial" or better and percentages "Partial" or better within each achievement-level range: 2001

Grade 12	Percentage "Partial" or better within achievement-level intervals			
Overall percentage "Partial" or better	Below ***Basic*** **269 and below***	***Basic*** **270–304***	***Proficient*** **305–338***	***Advanced*** **339 and above***
51 (1.7)	18 (2.1)	57 (2.0)	79 (2.7)	*** (***)

Standard errors of the estimated percentages appear in parentheses.
*NAEP geography composite scale range.
*** (***) Sample size is insufficient to permit a reliable estimate (see appendix A).
SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2001 Geography Assessment.

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